
AMERICAN GAS ASSOCIATION MONTHLY

How the Coke Market Was Developed in Battle Creek

By J. FRANK JONES

The Gas Merchant's Viewpoint

By R. W. GALLAGHER

Natural Gas Convention Is Success

Some Future Needs of the Gas Business

By W. ALTON JONES

A. G. A. Research Develops Hotel Broiler

House Heating in a Large Way

By W. ANDREW SCULLY

Teaching Customers to Read Their Meters

By J. C. BARNES

The Operation, Testing, and Efficiency of Conversion Systems

By C. GEORGE SEGELER

June, 1929



Volume XI
Number 6

Armature repairs
 Artificial flowers
 Auto cleaning outfits
 Bakeries
 Bakelite molding
 Bending wood and softening reeds
 Blueprinting
 Bottle washing and sterilizing
 Butter factories
 Button manufacture
 Candy manufacture
 Chemical laboratories
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Howard F. Weeks, Editor

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JUNE, 1929

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Our Own Who's Who



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XLIX

N. T. SELLMAN

BORN July 27, 1890, at Jönköping, Sweden. Educated Stevens Institute of Technology, 1913—degree in Mechanical Engineering. Entered gas business with the Consolidated Gas Company of N. Y. in 1913, in the utilization department as test engineer of appliances. Entered military service in June, 1916. Served on the Mexican Border with the 71st Regiment. Entered World War service in Coast Artillery Corps and served as engineer of power plant equipment at Fort Totten until Feb., 1918. Commissioned Lieutenant in 30th Engineers—served in France from Feb., 1918 to Feb., 1919. The 30th Engineers were offensive gas troops who later became first Gas Regiment.

Reentered employ of Consolidated Gas Co. in March, 1919, continuing service in Utilization Department. Became service engineer for American Gas Association in October, 1921, later becoming assistant secretary-manager, devoting considerable time to formation of A. G. A. Testing Laboratory.

Reentered employ of Consolidated Gas Company as Engineer of Utilization January 1, 1925. Appointed Assistant Secretary in February, 1928. Appointed Assistant to Vice-president in Charge of Sales and Utilization in March, 1928. Has written numerous papers on water heating, house heating, industrial subjects, and refrigeration. Is secretary, Managing Committee, A. G. A. Laboratory, Chairman, House Cooling Committee, Large Volume Water Heating Committee. Is member of General Requirements Committee, Industrial Managing Committee, Mixed Gas Research Committee, Managing Committee, Pub. and Adv. Section, Committee on Economic and Engineering Survey. Is member of American Society of Mechanical Engineers, Society of Heating and Ventilating Engineers, American Refractories Institute, Society of Gas Lighting, American Institute.

AMERICAN GAS ASSOCIATION MONTHLY

VOLUME XI

JUNE, 1929

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The Gas Merchant's Viewpoint

R. W. GALLAGHER

THE average citizen's viewpoint is that the natural gas business is a very simple one, no doubt feeling that practically all its functions are in straight line between the discovery and production of gas and its final use. The facts are, as natural gas men well know, that it is a highly complex and difficult business, not only in the technical engineering phases but also in its practical relations with the consuming public. The natural gas industry can congratulate itself for the efficient way in which it has co-ordinated its various activities. We might say that this co-ordination has been forced upon the industry as without it it would not be able to function at all. In a large sense this is true. Yet, like other industries, it might be handled in a haphazard manner and give indifferent service, but the type of service for which the industry can be rightfully proud must come, as stated before, through perfect co-ordination of the different phases of the industry which oftentimes overlap each other.

In this discussion, I propose, with your permission, to take the natural gas industry from just one viewpoint—that of a merchant knowing his customers' wants, having a commodity perfectly suited to those wants and endeavoring constantly to do his share in a highly competitive world in satisfying those wants.

It is in this quite simple and natural re-

lationship of merchant to market that several problems appear easy of solution. I will not pretend that they can be made easy of solution, because they cannot. But this thought can be offered, that if we think of ourselves as exactly what we are, we are at least on the right track toward a solution of our problems.

You will agree that while there may be some magic in other people's business, few of us have ever found any in the natural gas industry. This is by way of warning you that patience and labor may be required before we are able to see ourselves, among other things, as just plain merchants.

I do not intend to bore you with anecdotes of the past but it is necessary to go back a little for a few facts which are important on account of their direct bearing on present day gas merchant's problems. One fact is the ignorance which everybody originally had of the true value of the great product which we sell. Natural gas was sometimes thrown away, sometimes wasted and invariably sold far below its competitive value. But the result was the same, namely, chaotic marketing conditions and practically no true relationship between price and value.

In this respect the history of our industry does not differ from the history of other large enterprises in our country. Pioneers in the industry deserve a tribute from the present generation, within and without the industry, for their pioneering labors and foresight and their success in getting their gas to markets which, of necessity, were

Mr. Gallagher is President of The East Ohio Gas Co., Cleveland, Ohio.

Presented at annual convention of Natural Gas Dept., A. G. A., Kansas City, Mo., May 6-9.

distant from the producing fields. The next problem, of course, was proper engineering to perfect the transportation system and with it, the problem of selling the gas.

This look backward is not to tell anybody in the natural gas business anything with which he is not already familiar, but to bring into this subject a factor that bears directly on conditions that affect the merchandizing of our product today.

It is a condition of gas consciousness on the part of our customers which takes gas for granted, as something of long history and hence devoid of the "novelty" and "ultra-modern" attractiveness which nowadays paves an easy way into many markets. It is a problem, often, of "unselling" as well as of selling, of dissolving a gas consciousness based on old and imperfect appliances, before it is possible to begin creating an interest or sales approach based on the new and modern ways of using gas.

"Yes, we know all about gas—can't tell us anything about it," said the manager of a hotel who was building new kitchens for his institution. "We've been using it for years. It's all right, too, but naturally we want the newest and best, the very latest word for the new kitchens, and electricity seems to be about it."

The shining knobs and glistening enamel of something new had him. Our salesman asked if he might look over the old kitchen, and saw about what you would imagine—ranges of ancient vintage, flames yellow and escaping around the lids—all the appliances old and in about the same exhausted state. That was the picture of gas that this management accepted as true.

Our salesman explained to this hotel manager that he was not burning gas but throwing it away, and asked that he might show him what burning gas in a modern kitchen really means.

You get the point without going farther. It is the same in industrial and in every phase of domestic gas use. In bringing about a new gas consciousness it is often necessary to first overcome an existing gas consciousness which is not favorable.

A bad situation for which cheap and wonderfully good fuel was responsible in the first place is made worse instead of better by increases in the price of gas, because appliances which were none too good at the beginning are now a double handicap through: (a) a very noticeable effect on gas bills because of both their design and their deterioration due to age, and (b) their unfortunate comparison with the glistening, glittering, electrical appliances of recent introduction.

All this bears directly on our problem as gas merchants because it is unnecessary to remind ourselves that our revenue depends on the gas we sell, that the gas we sell depends on the people who can be induced to buy it. Judgment of our commodity is of prime importance here, and it is but half the truth to say of any business that a satisfied customer is its best advertisement. The whole truth is that a satisfied customer in these highly competitive days is your only customer.

As dealers in gas we have only two ways of improving the sales end of our business; new customers and better customers. The new customer, as it happens, is often not a good customer from the standpoint of being a profitable customer until he has been educated to the use of more appliances than he is usually inclined to start with.

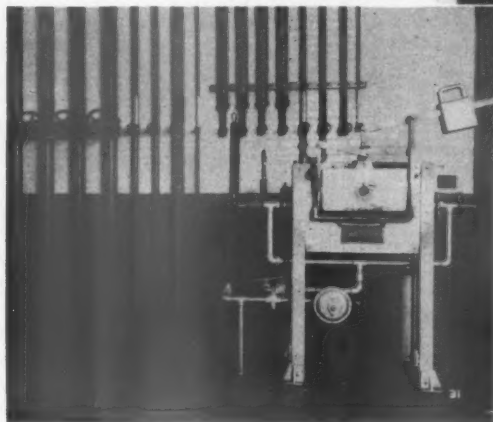
But the equation is the same. A customer adds appliances to his house lines in exactly the degree, both in time and number of appliances, as he is satisfied with the results he has already secured. His satisfaction depends both on the results he has had and what they have cost him.

We have arrived at the only starting point that is of any value in selling our gas and keeping it sold.

A small Ohio town that never had gas was piped two years ago, with interesting experiences along this line. The number of residents applying for service connections tallied almost exactly with the number that had been estimated in our calculations, but there came a lull, and then a dead stop when only about half of them ordered a meter set and became gas users in fact. A

survey of the remainder, those with services into the basement but no meter on the basement end of it, showed this reaction almost unanimously:

"Well, we had the service line put in be-



Laboratory research will give us certain progress, but essentially the great forward movement of the gas industry will come from improved sales tactics. "Get out and sell" can well be the watchword of every gas man in the United States and Canada.

cause maybe it ought to be there in case we ever sell the house—Oh, yes, we know gas is awfully nice and some day we hope—But, we wanted to see what the others say about their bills and all about it."

Here were customers who, no doubt, if left alone, would eventually become gas consumers but the real salesman problem is to bring an earning upon the plant investment which is being held in reserve to take care of these consumers. Then there is the problem of inducing a man who is already a gas user to go farther in gas using. He may have a one-bath-a-night water tank in his basement, or possibly an old tank with a burner under it that is being passed off as a water heater.

Replacement of antiquated or unsuitable gas appliances with modern ones is as necessary in the building up of a correct gas load as it is to start a new customer off with a good appliance. This is true even if, in the case of an old customer, an unsatisfactory gas appliance has to be replaced with one that consumes less gas than the one it replaces. Gas satisfaction and hence gas business building cannot overcome the ob-

stacle of a bad, or a badly functioning appliance.

We have a technical guide and help in this feature of our business, the American Gas Association Testing Laboratory, which has, since its inception, conducted over 75,000 separate tests in determining basic information on such important factors as the effect of variation in heating value, specific gravity, pressure and chemical composition on the functioning of consumers' appliances. The Laboratory has approved from test and inspection over 15,000 different models of gas ranges, space heaters, water heaters, gas boilers, furnaces, hot plates and laundry stoves and it is hoped that in the next year the entire domestic gas appliance field will be adequately covered.

I would like to digress here long enough to suggest that it is the duty of every gas company to support the Laboratory testing program to the fullest extent. This can be done by refusing to sell appliances that have failed to obtain its approval and by promoting the sale by dealers of those appliances that have been approved by it. The Association has a field representative devoting his

entire time to the promotion of cooperative sales campaigns and we can all help in establishing proper cooperation by seeing that our dealers are supplied with the monthly lists of appliances approved by the Laboratory and with such advertising material as is issued from the American Gas Association's Headquarters.

Equipped with the proper types of appliances, we are certainly much further along than ever before towards solving this problem of merchandizing but in addition, it must be borne in mind that future business will only come through using proper selling methods such as successful merchants for ages past have known like their ABC's.

In this connection the remark of a veteran gas range manufacturer comes often to my mind. He said, "My hardest work with salesmen—and sales managers, too—has always been to make them see that a sale is not over when it is made. That sale doesn't count when it is made, it is the next sale that counts, and the first sale is the first step toward it. In other words, we have already sold the first stove and want to sell him the next one he buys."

One appliance, like one sale, should lead to another. Here is a story to illustrate how necessary it is to have good substantial bridges between appliance sales. We learned that when one of our salesmen died, an old lady, who had never seen him in her life, broke down and cried. She had read his death notice in the paper. "I never saw him," she explained, "but once he sold us a Radiantfire, and once a year he would call me up to inquire if it was still working all right." Such customer relations are priceless. The formula was simple. This salesman sold carefully and well in the first place. His first sale satisfied the customer and his attitude toward the customer insured that he would be counsellor to that family whenever they desired to talk gas.

If it is necessary to make public "gas conscious," it is also necessary, as the other half of that proposition, for the gas company to be "merchant-minded."

Public relations is just another way of saying customer relations.

Because it is only fair to put one's house in order first, I am describing the state of merchant-mindedness into which the natural gas industry has had to educate itself in this new era of competition when there are at least five places—and all of them good ones—for every dollar that is to be spent.

Next comes education of the public, with advertising, lectures and demonstrations, work of many kinds, among which should be mentioned, almost first, practical and interesting educational work with school children. The little ones do two things: they learn for themselves that there is a difference between good and bad ways of using gas—a fact which they never forget—and they take the lesson home to their elders. I believe, also, that gas company employees should be taught the gas business, and should be made, each and every one of them, gas missionaries with a good knowledge of modern gas appliances and their use.

We have the problem of the actual introduction of more and better appliances into the homes and workshops of our customers. This is a many-sided problem, one on which so many local conditions bear that each must work out his particular problems as best he can. Without attempting to suggest any direct solution to other problems, I would like to mention one or two concrete instances illustrating our attempt to help merchants.

In one of our towns, we endeavored to help out Spring and Fall load by advancing the sale of Radiantfires. First we talked with all the dealers and explained that there were only two alternatives, namely, that we sell them ourselves, or that we help them to do so. The dealers were assured that if we sold them, we would sell only first class articles, and sell them in a first class manner, that we would be an ethical merchant in their midst, one that, we thought, they would be glad to welcome. As for competing with them, we said that the nature of our competition would be calculated to help their business along their particular line

(Continued on page 377)



How the Gas COKE MARKET Was Developed in Battle Creek

By J. FRANK JONES

IN developing a coke market, prevailing conditions in the individual town or city to a large degree govern the methods that should be followed. Then, too, considerable experimental work has to be done, for in this matter as with most others experience is the best teacher. Due to errors in our methods and also to changing conditions in our output, our plan for coke sales is very different from that of several years ago.

In Battle Creek for several years prior to 1921, we followed the usual procedure, that is to say, we called a grand rally of all our employees, went out and sold as much coke as possible—then promptly forgot the situation until the next rally.

However, the character and the size of our gas sendout changed so rapidly that we soon found ourselves with a real coke problem. Our old methods were entirely inadequate to dispose of the volume of coke we had for sale. Our sale of gas is now double that of most towns of our size and, as all this gas is made in a coal gas plant and our

increased volume of sales developed very rapidly, we were confronted with the disposal of an unusually large amount of coke for a field as small as ours. Therefore, we went about the development of this market in a manner more systematic than we had used in the past.

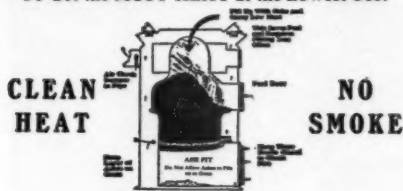
The first question to be worked out was that of storage. We found we could only store around 2000 tons of coke during the summer months which necessitated handling the coke over several times to get it to other parts of our yard for storage. We quickly realized that it was imperative to sell a large amount of coke during the summer months, so we immediately organized a summer coke campaign similar to those now in vogue in a great many communities. These summer campaigns proceed about as follows:

We reduce the price on coke for summer delivery \$1.50 per ton less than the high point during the previous winter. Any one ordering on this basis must pay for the coke at time of delivery, and delivery must be made during May, June, July, or August. After September 1st our price advances at least \$1 per ton.

Mr. Jones is sales manager of the Battle Creek Gas Co., Battle Creek, Mich. Presented at Joint Production and Chemical Conference of A. G. A., Baltimore, Md., May 27-29, 1929.

HOW TO BURN GENUINE GAS COKE

To Get the MOST HEAT at the Lowest Cost



The Right Way

How to Start Your Fire

Start your fire with paper and about half as much kindling as you would use for hard coal. When fairly burning, throw on plenty of coke and open all drafters till you get a good heat—then close them.

IMPORTANT: You can save fuel and get much more heat by always keeping your firepot well filled with coke—see illustration above.

How to Regulate Your Fire

To keep a low fire, close the draft openings in the lower part in the front of the furnace, and open the cold air draft in the chimney pipe. Keep the draft in the hot door open and the damper in the chimney pipe open draft in chimney pipe.

When to Shake Your Furnace

The fire should be shaken down once, and in cold weather twice, each day. When shaking, stop as soon as the fire coals begin to appear in the ash pit, leaving a layer of ashes between the fire and grate bars. After shaking be sure to leave the grate bars in the proper position. This will prevent the grate fingers from burning off. Be sure and close your ash pit daily. Remove other ashes to pile up to the grate. This comes quite as easy as with any kind of fuel.

How to Bank Your Fire

At night give your furnace a big bed of coke, with a little fire coke or brown over the top to help hold the fire. Open up the drafters for about five minutes, then close off all drafts and open check in the chimney pipe.

Battle Creek Gas Company

The coke instruction card

The first year we sold approximately 3000 tons during this summer sale. Every year since this volume has been increased until, during the summer of 1928, we sold in a period of four days 17,000 tons of coke for summer delivery. Of this 17,000 tons, about 600 tons were cancelled due to duplication of orders. In some cases people ordered more than they could use, and some of our customers moved out of town.

Our first year's experience with the summer campaign proved that we were on the right track. In other words, we discovered it was not a difficult matter to sell coke. However, in going over our list of customers the next year, we found many of our customers of the previous year were missing. Investigation disclosed that they were either not familiar with the proper way to burn coke, or were dissatisfied with results and just naturally changed over to some other fuel. It was quite obvious that we must follow up all sales to see that customers were properly instructed in the use of gas coke. This, we believe, is one of the big factors in our success in merchandising coke. As before said, it is not hard to sell coke to a customer the first time. The real problem is to so instruct the customer that

he will continue to be sold for all time.

From that time on we made use of a coke instruction card, a copy of which is shown here. This gives full instructions on the correct method of using coke. Our drivers were given these cards with instructions to tack them on the outside of fuel bins, and the salesmen who followed up coke sales also distributed the cards. The important point in the distribution of these cards is to see that they are tacked up where the customer will read them.

During these investigations at the homes of customers who had discontinued the use of coke, we found quite a number of complaints as to the preparation of our coke, and it was evident that this was a most important factor in the merchandising. We immediately set about installing the proper equipment at the plant to prepare coke that would be clean and uniform in size. The result is we now have an up-to-date screening plant, and it is the policy of the Battle Creek Gas Company not to allow a ton of coke to leave the plant that is not thoroughly cleaned and sized. This, the writer believes, is the greatest factor in producing and holding coke customers.

Our coke is marketed in the following sizes, with no difference in price for any of the sizes:

Furnace	(over 3")
Stove	(2" x 3")
Nut	(1" x 2")
Magazine Nut	(½" x 1")

The fact that we often receive commendation from our trade for the courteous and efficient manner in which their coke deliveries have been handled proves that our insistence on prompt, courteous, intelligent service has paid well. We will not employ a truck driver who is not above the average in intelligence even though it is necessary to pay more money than is paid in most cases. We have received hundreds of requests from our customers to send the coke up by a certain driver, indicating the value of this policy. Some of our drivers have been with us for years.

Our delivery trucks are kept in the best

(Continued on page 380)

Natural Gas Convention Is Success In Every Way

REGISTERING the accomplishments of a vigorous and growing industry, the Natural Gas Department of the American Gas Association held its annual convention in Kansas City, Missouri, May 6-9, with more than 1300 in attendance.

An exhibit of machinery and appliances representing every medium through which gas is made available to the public indicated in its extent the great interest of the manufacturers in the natural gas meetings.

In opening the convention on Tuesday, May 7, and welcoming the delegates to the city, Mayor A. I. Beach, of Kansas City, remarked that the day of the demagogue is passed due both to the industry's progressive policies and the enlightenment of the public in general.

Samuel W. Meals, of Pittsburgh, Pa., chairman of the Department, sketched some of the important accomplishments of the natural gas business in the chairman's address. He described numerous long-distance gas pipe lines now under construction or being planned which total more than 2500 miles.

Mr. Meals said that the natural and manufactured gas industries are being drawn closer to each other through the natural results of the laws of supply and demand.

He continued as follows:

"The natural gas industry is giving its best efforts to aid in the necessary conservation movement. We have been making tests and repairs to eliminate line losses, have aided our customers to utilize our product better with the least waste, and have introduced conservation measures in the field. Cooperation between the operating companies and the oil producers, with



S. W. Meals



H. C. Morris

proper and stricter plugging laws on our statute books, will conserve and save for future generations fuel values inestimable at this time. Storing gas underground will become more popular and a common practice after our engineers have made a more complete study of the problem."

The report of E. J. Stephany, of Pittsburgh, secretary of the Department, revealed a large amount of good work accomplished since he took over the secretaryship to which he was appointed last winter.

Mr. Stephany reported that there are at present 91 men on 12 committees of the Natural Gas Department. There are also 293 natural gas men on 172 general and sectional committees of the American Gas Association. The

membership of the Department has increased from 1278 to 1356 in a year, Mr. Stephany stated.

The next item on the program was a splendid tribute to those members of the Department who have died since the last meeting. This was given by John M. Garard, of Columbus, Ohio.

Col. Oscar H. Fogg, of New York, N. Y., president of the American Gas Association, addressed the convention briefly with a few well-chosen words. He stated that both branches of the industry had benefited from the consolidation.

W. Alton Jones, chairman of the executive committee, Henry L. Doherty and Co., New York, N. Y., then presented his address on the "Future of Our Industry." This address is printed in this issue of the MONTHLY.

Alexander Forward, managing director of



E. J. Stephany

the American Gas Association, was the next speaker. Major Forward told of the services of the A. G. A., and explained in detail much of the work that is being done for the entire gas industry.

Miss Julie Paliet, of the New Orleans Public Service, Inc., presented the paper of Harry C. Abell, vice-president of the Electric Bond and Share Co., New York, N. Y., on "Changing from Manufactured to Natural Gas Service."

This paper was a most comprehensive description of the experience gained in New Orleans and Memphis, and undoubtedly it will be regarded as a textbook for many years to come. It will be printed in several of the gas trade papers, in *Natural Gas*, and in the proceedings of the meeting.

The second session of the convention opened with a paper of John C. Diehl, of the Metric Metal Works, Erie, Pa., on "Some Pipe Line and Transmission Problems." This was a technical presentation, and considered such factors as the economies of construction, the pulsation effect on meters, and the effect of atmospheric pressure on quantity or price of gas. In part Mr. Diehl said:

"The manufactured gas and natural gas industries are becoming more and more closely allied. It is expected that in the not-far-distant future practically all of the gas lines will be linked together in such a way that it will be possible to transmit manufactured gas from locations where gas can be made close to coal mines or oil fields, at a low cost of production, and furnish this gas to other localities wherever supplies of raw fuel are not available, manufactured gas will be delivered to natural gas

communities to meet peak load demands or natural gas to meet the peak load demands in the manufactured gas lines.

"Many large gas companies are looking forward to the time when the gas will be used exclusively as a domestic fuel in the larger cities, and most of the coal which is mined will be converted into coke and gas, the heat being utilized for generating electricity and the gas being transmitted to the cities for heating, cooking, and industrial purposes."

This paper was ably discussed by Dr. Harry Ihrig, of Ralph E. Davis Co., Pittsburgh, Pa.

"What Natural Gas Adds to the Wealth of a State" was the title of a particularly interesting paper by Harry C. Hoover, natural gas consultant, Cincinnati, Ohio. Mr. Hoover told of an investigation made in Ohio to determine the savings to the people as a result of natural gas service.

Mr. Hoover said that if the people of Ohio had been forced to use a substitute for natural gas in 1927 for cooking and water heating, they would have spent \$76,000,000 more than they did for natural gas. There was an additional saving to home owners, by eliminating commercial water heating and cooking, of \$47,000,000. In industrial utilization and house heating the savings were \$40,000,000. This made a total saving of \$116,000,000, Mr. Hoover stated.

The paper on "Selling Domestic Gas," by George Bowersox, of the Southern California Gas Co., Los Angeles, Calif., was read by D. U. Wheaton, of the same company. In answering the question as to whether a utility company should merchan-

(Continued on page 363)



A Welcome
to the members and delegates
of the
AMERICAN GAS ASSOCIATION
Convening May 6-9 in

CONVENTION HALL
To the Public: The convention will be held at the Convention Hall, 910 Grand Avenue, Kansas City, Missouri, from May 6-9, 1929. The hall is a large, modern building with a high ceiling and ample room for the convention. The hall is located in the heart of the city, and is easily accessible by public transportation. The hall is a fine example of modern architecture, and is a fitting place for the convention. The hall is a large, modern building with a high ceiling and ample room for the convention. The hall is located in the heart of the city, and is easily accessible by public transportation. The hall is a fine example of modern architecture, and is a fitting place for the convention.

KANSAS CITY GAS CO.
910 Grand Avenue
WYANDOTTE COUNTY GAS CO.
Victor 9700
820 Milwaukee Ave.
Chicago 1120

*This is how the delegates were welcomed to
Kansas City, Missouri*

Teaching Customers to Read Their Meters

By J. C. BARNES

IT is a well-recognized fact that utilities can not prosper unless a spirit of mutual good will and tolerance is developed between the individual company and the customer. Just as the customer is dependent upon the utility for service, so is the utility dependent upon the customer for additional capital to maintain, construct, and enlarge its facilities.

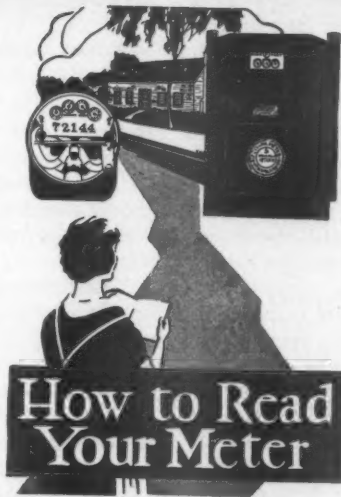
A recognition of the necessity for this good will is often far easier than its realization. A utility company must ever be on its toes to foster, through institutional advertisements and generally pleasant public relations, this spirit of tolerance.

Admitting that a great part of the misunderstanding between company and consumer lies in the intangibility of the products sold, the New Orleans Public Service Inc. recently entered upon an elaborate and extensive plan of teaching their customers to read their meters, in the hope that by arming

them with the knowledge of how to check the amount of gas and electricity consumed in a certain definite period of time, the possibility that they were paying for something they did not get would be eliminated.

It, therefore, becomes quite obvious that if every customer could check, each month, the amount of gas and electricity used in the same manner as he would check any other ordinary bill received, one of the greatest causes for misunderstanding would disappear.

Several weeks' time was spent by this company in a study of the most effective way in which to present this campaign of meter reading to the public. The first real step was the installation of a meter reading school on the first floor of the Public Service building. Model instruments, designed to simplify the teaching of meter reading, were installed. In charge of this instruction booth was placed an intelligent, affable, and well-trained meter reader, who had been featured before in various advertisements concerning meter readers' uni-



Above is shown the booth in the office, and below is the cover of the educational booklet

Mr. Barnes is director of advertising for the New Orleans Public Service Inc., and is immediate past President of the Public Utilities Advertising Association.

CAN YOU READ YOUR METER?

He Will Show You

It's easy to read your meter

How to Read Your Meter

Booklets Will Be Mailed

New Orleans Pub

Yours is Ready Now

How to Read Your Meter

New Orleans Public Service Inc.

Newspaper advertisements stimulated interest in the campaign

forms and badge numbers. The photograph here shows the set-up of the instruction booth, with the model instruments displayed. A large sign, "It's Easy To Learn To Read Your Meter," at the top of the side-wall of the booth was erected prominently so that the most casual observer upon entering the building could not fail to see it.

Simultaneously with these preparations, a 14-page booklet was printed with a three-color cover. This was entitled, "How To Read Your Meter." This booklet contains clear, simple instructions with ample illustrations of gas and electric meter dials for accurate meter reading. The reader is also told that the amount of current or gas consumed must be measured from the last reading of the meter. Following the instructions in actual meter reading comes an explanation of how to compute the gas or electric bill. A table showing the *net* bill corresponding to every *monthly* consumption from zero up to 200 k.w.h. is given for computing the electric bill. Owing to the simplicity of the gas rate, no table is given. It is a matter of a moment's calcula-

tion to figure the gas bill, once knowing the rate per 1000 cu.ft., and remembering to add 25 cents a month service charge. Thousands of these booklets were printed, and the forms always held in case an extra quantity was needed.

These booklets were placed on display in the meter reading booth on the first floor of the building the day the booth was opened. On this same day the first advertisement announcing this new service appeared in all daily papers. This 1000-line advertisement, captioned "Yours Is Ready Now," pictures the booklet ready for distribution. The public were also told that these booklets would be available by writing or phoning as well as by personal calls.

This new service was hailed with overwhelming enthusiasm on the part of the customers. On the first day approximately 800 persons had their first lesson in meter reading, and the count of pamphlets given out showed close to 750.

At the beginning of the second week of this service another large newspaper adver-

(Continued on page 369)

A. G. A. Research Develops Hotel Broiler

THE first real improvement in heating heavy duty broilers for use in hotels, restaurants, and clubs has been developed and recently perfected through research sponsored by the American Gas Association. This is in the nature of a radiant surface heater. With this type of burner an incandescent refractory slab projects a solid sheet of radiant heat of 1300° F. down onto the food thus affording the fastest heat transfer known. This radiant heat has a penetrating quality which cooks the food 25 per cent faster than any other known method without burning and thereby preserves the vitamins and retains the juices. It also permits prompter service to patrons, effects a reduction in fuel consumption and operating costs, and puts gas in the ascendancy over charcoal and electricity in both efficiency and cost.

This broiler is the simplest one to operate now known as the entire control is centered in a single switch which can be snapped on or off at will. For this reason the service required by kitchen employees is reduced to a minimum.

This radiant surface burner was developed through a program of research covering a period of years by the American Gas Association in cooperation with the Surface Combustion Co. and the Standard Gas Equipment Corp. The principle embodied is entirely new for radiant heat is produced on the face of a porous alundum slab which sets in a shallow cast iron box. The gas is forced through this slab and lighted on the exposed face which it quickly brings up to incandescence thus producing a radiant bed of fire like that produced by charcoal. The advantage, however, lies in the fact that the heat from this burner can be projected down onto the food and can be had almost instantly and at all times by the simple snapping of a switch. It also does away with charcoal and ash handling, fire building and tending.

This radiant slab projects heat in any direction it faces, just like the sun, and has

an operating temperature on the food of 1300° F. The heat from the ordinary burner has a temperature of only 750° F. and rises where it should project downward.

One of these new broilers has been in daily use in the laboratory for more than three years. Supplementing the laboratory tests, field tests on more than 25 of these broilers have been conducted at some of the largest hotels in the country for more than a year and under the most severe conditions. These have proved more than satisfactory and the burners show no deterioration whatever.

One installation was made in the Roosevelt Hotel, New York, more than a year ago and Roger Cretaux, chef-steward, says that: "We have never had a bit of trouble or the least cause for repair since installation, even the small motor attached, which we had forgotten about, has functioned without attention. Our cooks are well pleased with your service broiler and I am personally glad to recommend it as efficient in every respect. Since March, 1928, this broiler has been in constant service from 6 a.m. until the following 2 a.m., or 20 hours every day."

Do You Want to Hire Newly-Graduated Engineers?

EXECUTIVES of the gas industry who are interested in securing for their companies the services of graduates from engineering schools are reminded that this month thousands of young men will receive their degrees and be looking for business connections.

In addition to the availability of students in the gas course at Johns Hopkins, letters have been received at Association Headquarters from the Carnegie Institute of Technology, Pittsburgh, Pa., and Pratt Institute, Brooklyn, N. Y., stating that some of the members of the class of 1929 of each institution are anxious to make connections in the gas industry.

Carnegie Institute will graduate about 381 students, John D. Beatty, secretary of the Bureau of Recommendations, writes.

The class of 1929 in industrial engineering chemistry at Pratt numbers 38, according to Allen Rogers, supervisor.

Further information may be secured direct from Mr. Beatty or Mr. Rogers.

Hold New England Sales Conference June 21-22

THE fifth New England Regional Sales Council will be held at the Hotel Rock-Mere, Marblehead, Mass., June 21-22, under the auspices of the Sales Division of the New England Gas Association and the Commercial Section of the American Gas Association. A record attendance is expected.

The following tentative program has been arranged:

Friday Afternoon, June 21

Opening Remarks—J. H. Sumner, chairman, Cambridge Gas Light Co., Cambridge, Mass.

Address of Welcome.

Response—J. J. Quinn, President, New England Gas Association.

What Merchandising Follow-up Means to a Cooperative Advertising Campaign—William A. Willis, Brass and Copper Research Corp., New York, N. Y.

Commercial and Restaurant Competition—Harry King, Standard Gas Equipment Corp., New York, N. Y.

The Use of Direct Mail in Gas Company Advertising—Henry Obermeyer, Consolidated Gas Company of New York, New York, N. Y.

Saturday Morning, June 22

Some New Phases of Electrical Competition—Roger G. Moss crop, Public Service Co. of New Hampshire, Manchester, N. H.

The Newer Domestic Uses for Gas—The Home Laundry—James E. Trainer, W. E. Lamneck Co., Columbus, Ohio.

Selling the Gas Bill—a symposium presented by the New England Gas Association players.

Closing remarks—J. H. Sumner, chairman.

The conference dinner will be held at 6:30 o'clock Friday evening, June 21. There will be special entertainment and an address on merchandising by an outstanding authority.

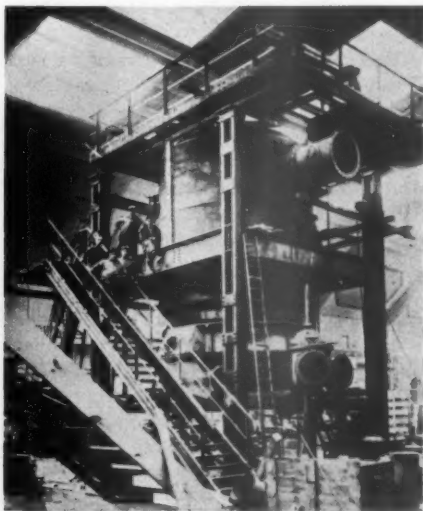
Principles of Conduct Is Accepted By Board

AT the last meeting of the Executive Board of the American Gas Association, "Principles of Business Conduct," as outlined by the Chamber of Commerce of the United States, was accepted.

Scenes at German Gas and Water Show



© Herbert Photos



© Keystone Views

At the left is shown a view of the German Gas and Water Exhibit in Berlin. At the right is another view showing a gas generator which produces 70,000 cubic meters of gas within 24 hours

Some Future Needs of the Gas Business

By W. ALTON JONES



W. A. Jones

NATURAL gas in commercial quantities was first discovered in this section at Iola, Kansas, in 1888. Shortly thereafter gas was piped to the city of Iola and, as additional gas fields were discovered, Chanute and Humboldt were served. In 1890 gas was discovered in Montgomery County, Kansas, near Independence. Six years later larger gas deposits were discovered in this section and attempts were made to find suitable markets for this newly found fuel.

Various companies were organized and pipe lines constructed to some fifteen or twenty communities, the largest extensions being a line to Kansas City built in 1904 and an extension to the Joplin mining district in 1905. In 1906 and 1907 other lines were constructed from Montgomery County to Wichita, Newton, and Hutchinson. In 1907 one more line was built from Iola field to the Kansas Cities and later other lines were built to St. Joseph and other important centers. The year 1910 found most of the communities in this section served with natural gas.

In many instances the promoters of these gas projects were not experienced in the business. Many of them believed that the bringing in of a gas well meant the tapping of an inexhaustible supply of fuel and that great wealth awaited any one who transported that fuel to market.

It was on such a premise as this that many of the pipe lines were built and it was also on this premise that the rate structures were designed and business, both domestic and industrial, added to the lines. It is not

surprising therefore that, as we review these early operations, we find the following conditions prevailed:

1. No effort whatever to conserve the supply or prevent waste.
2. No attention paid to the design of rate schedules which would attract business that could be served economically.
3. No attempt to block up or hold in reserve large acreage of gas leases for future supply.
4. No attention paid to the efficiency of utilization equipment.
5. No coordination of pipe line systems, looking to the elimination of duplicate investments.

In almost every instance, the pipe line projects were dependent upon a single pool, and, when the supply of gas in these several pools began to disappear, the communities served by them at once experienced acute shortages of gas. As time went on, these shortages became chronic. The condition became general throughout this section until practically none of the important centers had what could be considered a dependable supply of gas. In some instances service to communities was discontinued entirely and other forms of fuel substituted. Various sporadic attempts were made by different operators to supplement the supply to take care of the markets they had developed, but in most cases the rates for service had been inadequate and they were unable to attract capital with which to proceed.

It was then that many of these promoters realized that, because the business had been based on an improper understanding of the fundamentals on which it must operate, they faced partial or total loss of the millions of dollars which had been invested to provide natural gas service in this section of the country. The public became convinced that natural gas could not be relied upon as a dependable source of fuel supply and began to use it only in a limited way. This further complicated the problems of the opera-

Mr. Jones is chairman of the Executive Committee of Cities Service Company.

This address was presented at the annual convention of the Natural Gas Department, A. G. A., Kansas City, Mo., May 6-9.

tors, for with the dissatisfaction of the public as to the availability of supply, they lost much of the heating business which had heretofore been on their lines and their financial problem became greater and greater until many of the companies faced bankruptcy and had to go through receivership.

It was at this juncture that Henry L. Doherty was first urged to enter the field in an attempt to reorganize and stabilize the situation. After a most careful study of the conditions and without in the least discounting the difficulties which confronted him, he had the courage to tackle the job. The developments which followed are familiar to most of you. It will suffice to say that in the years which have elapsed since Mr. Doherty entered the field, the natural gas business in this section has undergone a complete reorganization. Millions of dollars have been invested in new sources of supply; additional millions have been put in main trunk lines interconnecting these various pools of gas, until now this section is served with a complete network of high pressure gas lines, tapping more than thirty distinct gas pools and extending to the great Panhandle field of Texas, from which source large quantities of natural gas are being drawn and being used here and in St. Joseph, more than 500 miles away.

The obstacles which have been overcome in bringing about these things which I have briefly summarized in a paragraph have been so great that it is questionable whether a man of lesser courage than Henry L. Doherty would have tackled the job; and I sometimes question whether even he would have had any appetite for the business if he had known all of the difficulties he was to encounter. It was no small matter to raise approximately one hundred million dollars of new capital which had to be put into this business, for the failure of some natural gas projects had impaired the credit of the natural gas business, which has never been entirely satisfactory. It was no easy task to redesign and revamp the rate structures which prevailed in this section. Much remains to be done yet in this field and, until there is a better understanding on the part

of the gas industry and the public of some of the fundamentals of our business, we shall not be able to introduce the rate structures which will at once insure a fair return to the investors in the gas business and adequate service at the lowest possible rate consistent with such service.

I have perhaps devoted too much attention to a review of recent developments in this field, but, as I see it, many of the problems we shall meet in the future are closely related to those which have been dealt with here.

A word now as to some of the future problems of the industry, as I see them.

The Earl of Birkenhead, one of England's foremost statesmen, in a recent article entitled "One Hundred Years from Now," attempted to prophesy some of the forces which civilization in 2029 will have at its command. Among other striking statements he made are the following:

1. Babies will be produced by chemists in laboratories.
2. The entire institution of marriage will be changed.
3. We will all live to be 150.
4. No one will need to work more than two hours a day.
5. Agriculture will be obsolete—except as a hobby—all foodstuffs will be produced synthetically.
6. Man will be able to alter the geography or climate of the earth.
7. Coal mining will be an extinct industry.
8. A 48-hour day will come into being by retarding the rotation of the earth.
9. Sitting in our homes we will see and hear events the world over.

These may appear to be startling predictions, but, as we look back over the history of the last 100 years, some of them do not appear out of phase with the progress made during the last era. All of these predictions will have a direct bearing on our every-day life and some of them, if realized, will be of the greatest importance to the natural gas industry. These changes will not all come about in a single day and of course many of them, if they do come about at all, will come to pass before the one hundred years are up.

I do not want to appear in the role of a prophet, or do I feel like predicting what

the gas industry will be like in 2029. I would prefer to leave those predictions to others more experienced in prophecy, but I think we might with profit here and now consider some of the more immediate needs of our industry to the end that in the five, 10, 15 or even 25 years of the period covered by Lord Birkenhead's prophecy we can better serve the public.

We have many problems confronting us today. Most of them are not new, but our future progress is dependent upon their solution. I shall briefly review some of the most important problems as I see them and leave their solution for your deliberation.

Need for More Rational Rate Structures

It should be unnecessary at this convention to bring up for discussion the all-important problem of the proper design of rate structures. There has been so much written on this subject that it might seem there was little more to say, but the fact remains that, if you examine the methods of charging employed by various public utility companies, glaring inconsistencies are noted and complete lack of uniformity in design and application.

I do not mean to suggest that there should be a uniform price for electricity, gas, or any other form of public utility service which would apply in Maine as well as in California any more than I would suggest that the price of a box of oranges in California should be the same as in Maine, or the price of a bushel of wheat should be the same in Kansas as in New York. Local conditions, such as availability of supply, water power, coal, and natural gas all play a part in fixing the price of a commodity at a given point.

But I do feel that it is a source of great embarrassment to the industry and great confusion to the minds of the public that the rate structures of the gas companies of this country are not more uniform or that the methods of charging for service are in some cases so dissimilar that, if applied to other commodities, they would appear as irrational as selling eggs by the dozen in one city, by the yard in another, by the bushel in another, and by the pound in still a fourth.

It is a fact that in many cases the rate structure has been designed by a company with the sole idea of discouraging the use of large quantities of gas, ignoring entirely the important fundamental that the future development of our business depends upon selling an increasing amount of our commodity at fair and reasonable rates. In the case just referred to, the gas company designed such a rate with the idea of limiting the amount of gas used by a customer during peak days so that the company could prorate the distribution of the available supply. The step-up block rate installed failed to reduce the demand on peak days when the customer was willing to pay anything for gas but did curtail the sales on the days when the company had plenty of gas to deliver. There was no betterment of service but instead a decided reduction in the earnings possible under a proper form of rate. A real solution of this problem could have been found in the design of a rate which would permit a customer to take any amount of gas he desired at any time, if he were willing to pay the cost of rendering the service at that time.

For many years the straight meter rate of charging for gas service has been the one accepted by both the companies and the public and yet the time has long since passed when competent engineers agreed that this is the most equitable method of charging for service. There is a popular misconception that under this method of charging for service all customers are treated fairly, but this is not the case—in fact, the reverse is true. There is no equity in such methods of charging in the average community. In fact, it introduces the greatest discrimination in the distribution of the cost of service, penalizing the good customer with the losses incurred through serving the convenience users and in the end raising the average price of the commodity to all.

In recent years many of the manufactured gas companies have faced decreased earnings due to the intense competition which they have met from electric and oil companies. Some of the gas companies have been forced through loss of business to seek relief in

increased straight meter rates. Such action very often drives off their lines many of their most valuable customers. In one large city in the State of New York the straight meter rate had become so high that the company lost thousands of customers and finally was forced into receivership. The company was purchased by a new management, the old method of charging was abandoned, a service-charge form of rate was installed, the average rate to the customer greatly reduced, the volume of sales per customer practically doubled, and the company is now in a prosperous and healthy condition and its customers are satisfied with both the service and the rates.

This is by no means an isolated case, but instances are still much too rare in this industry where scientific, rational, and equitable methods of charging are accepted and installed by our companies. We have been far behind the electrical industry in this matter and they have much yet to do in the design of a rate structure.

I am convinced that competition for business between the gas and electric companies will increase in years to come and I am equally certain that, unless we give more attention to the design and promulgation of rational methods of charging for service, we will lose millions of dollars of business which we should properly serve.

Need for Greater Sales Activity

Next only in importance to the proper method of charging for service I would place the need for a most aggressive sales policy. For many years there was a popular misconception in the minds of public utility men that salesmanship in the industry was of no great importance, that the service was so essential the public would seek us out. Most of our members have discarded this idea, but I am sure that none of us is making the most of his sales possibilities.

In many places it has been comparatively easy for natural gas companies to displace solid fuels in industrial plants and coal for water heating and house heating. But, as we look into the future, we can not help but face the keenest competition in the indus-

trial field in the introduction of high efficiency pulverized coal burning equipment, and, if we are to contend with a continuation of overproduction of oil which has prevailed for some years, we face the possibility of oil companies taking much of the industrial business which the coal companies cannot secure. In the domestic field we face a further invasion of our markets by electric companies, which in some instances have already reduced their rates to the point where they are taking on large amounts of water heating business, and experiments are now under way in two sections of the United States looking to the heating of homes by electricity.

We cannot stand still in the face of such competition and in my opinion only the adoption of the most aggressive sales policy will protect us from great loss in the future. The automobile industry, the radio industry, and other similar lines of business have shown a spectacular growth in the last ten years and I believe a close study of their development would show conclusively that much of it has been due to high class salesmanship.

The natural gas industry of the future will need more and better salesmen, who understand the problems of our business and who know how to develop such business as we can economically serve.

More Efficient Utilization Equipment

During the past few years there has been great improvement in the efficiency of the utilization of gas in all types of appliances and particularly in house heating equipment. In the early history of the gas business there was great loss of gas in its utilization by the customer. The gas was in many instances sold at ridiculously low rates for both domestic and industrial purposes. In some instances in this section of the country contracts for ten years were entered into at as low as 2 cents per thousand. Of course, gas was not delivered at such rates over any long period of time, for long before the termination of such contracts the companies making them had passed out of existence through financial failure. But,

during the period of ridiculously low prices, the customer had no incentive to improve the utilization of gas. The experience of the business has shown that the customer will not pay the price for efficient equipment unless it is a dollars and cents saving to him.

The top burners in the majority of early natural gas ranges were placed so that the burner ports were 3 in. or more below the bottom of the cooking utensil. The length of the flame varied from 3 in. upward. Many ranges were equipped with unlined ovens. The common type of water heater was that with a burner under a storage tank and without a jacket around the tank to carry the product of combustion across the heating surface formed by the sides of the tank. In other extreme cases bath water was heated by placing pipe burners directly under the bath tubs.

Furnace burners were as a rule inefficient; in some cases no burners were used, but an open end pipe was inserted into the firing door and the gas burned in a raw state without primary mixture. In other instances burners were installed so that the product of combustion passed so quickly to the flue that the efficiency of the furnace was extremely low. Examples of inefficient house heating furnaces have been found to require a gas demand of 1000 cu.ft. per hour to heat the house in zero weather, when a proper installation oftentimes in the same furnace would do the same work with a gas demand of 200 cu.ft. per hour.

While these conditions prevailed, is it any wonder that many gas companies refused to take on house heating business? It was next to impossible for the companies to render good service because of the extreme demands made upon their lines.

The above references to inefficient appliances apply to conditions which existed in important gas areas as late as 1920. In the past few years great strides have been made in improving efficiency of utilization, both as the result of adjustment and changes in existing appliances and substitution of efficient appliances for obsolete types. The great improvements which have been

brought about in range and water heater design are too generally known to require comment.

Improvements in house heating are of more recent origin. There are now available efficient and moderately priced gas furnaces and boilers for residence heating. Where coal designed burners are in good condition and reasonably efficient as such, there are conversion burners available which can be installed at a moderate price and which will give thermal efficiencies closely competing with the efficiencies of gas designed appliances.

The American Gas Association has greatly assisted in the work of improving the efficiency of utilization equipment, but much yet remains to be done in this field. Our entire membership should support the Association in this work. We must all keep in mind that the future development of our business is in a large measure dependent upon the design, manufacture and sale of new and efficient gas-consuming devices.

Interconnection of Pipe Line Systems

In recent years the light and power companies of the country have been giving much attention to the interconnection of large transmission systems. In many cases such interconnections have made it possible to reduce the amount of reserve capacity which the participating companies had theretofore been forced to carry to insure service in any given area and in still other cases where large units have temporarily gone out of commission, these interconnections have made possible continuous electric service where such service would have been impossible without interconnection.

Some of these same benefits and advantages can be had through the interconnection of large natural gas systems, each having its own reserve supply for it not infrequently happens that at the time when there is a surplus of gas on one system, there is a shortage on another. In the interests of better service, we can well afford to give this question the most serious study.

Utilization of By-product Gas

In some sections of the country there are available large quantities of by-product gas contiguous to markets already served with straight natural gas. The efficient utilization of this by-product gas is in the interest of economy and in many cases such gas can be used to assist in carrying peak demands.

The subject of mixing gas of various grades is of the greatest importance, for, if we look far into the future, we will no doubt be confronted with the exhaustion of some of our large natural gas reserves and before these reserves are exhausted, we will be confronted with a diminishing supply of gas. If, at this time, we have found the way to supplement our natural gas resources with manufactured gas, we can at once prolong the useful life of many of our pipe line systems and render the public the greatest service.

The American Gas Association has recently formed a committee to study this problem and work is now going forward in the Cleveland laboratory, but, like many other of our research activities, they will need your continuous support in the future.

Greater Conservation of Gas

There is an old adage which reads "Waste brings woeful want." If this be prophetic, the gas industry and the public will some day, and perhaps much sooner than most of us here are willing to concede, face a great famine, for we have been in the past and still are most profligate in the use of natural gas, and still more profligate in the methods employed in its production.

The American Gas Association is now devoting much attention to the improvement of utilization equipment and most of the large companies are trying to discourage the sale of inefficient gas equipment, for they realize the sale of such equipment means dissatisfied and unprofitable customers. Inefficient appliances make a cubic foot of gas less valuable to the customer—to make the result cost the same the gas must be cheaper. As a matter of fact, it makes service more expensive, because the property must be written off faster.

Too little attention, however, is being given to the more important problem of stopping the enormous waste in the production end of our business. These wasteful practices are so numerous I cannot enlarge upon all of them here, and I am sorry to say that many of them are so common that they are often accepted as inevitable.

Perhaps the most common waste of natural gas is that which now goes on in connection with the development of the oil resources in the country. The rapid development of the automobile during the past two decades and the almost universal use of this and other petroleum consuming devices has stimulated the most intense search and scramble for oil. The great fortunes amassed by the early pioneers in the oil industry have drawn many adventurers into this business and the production of petroleum has now reached the point where it greatly exceeds the legitimate uses of petroleum. This condition has prevailed for so long that the entire oil industry is in a chaotic condition. In fact, it may be truly said that the oil producers of this country are literally being drowned in oil.

The results which followed closely upon such a condition are those which might logically be expected to follow a complete disregard of those economic laws which govern all business and might be listed as follows:

1. Rapid dissipation of our great oil resources.
2. Ruthless competition in marketing and untold duplication of investment in this branch of the industry.
3. Excessive drilling; or in many cases town lot drilling, where in some instances ten wells are drilled for each one that is necessary.
4. Diminishing profits and in many cases great loss to stockholders of oil companies.
5. General impairment of credit of oil companies because of the lack of confidence of investors in the future of the business.

You may ask what all this list of troubles of the oil companies has to do with the natural gas business! The answer is to be found in the fact that our business is so closely related to the oil business that the

(Continued on page 367)

Reach for a Faucet instead of a Match!

* GETS JIMMY READY FOR A BATH *

* WATER TOO COLD *

* TO BASEMENT TO LIGHT OLD FASHIONED HEATER *

* LATE WITH LUNCH *

* FINALLY INSTALL SPECIAL GAS WATER HEATER *

* FAMILY OF FIVE NOW HEALTHY AND HAPPY *

Reach for a Faucet instead of a Match!

* "GROSS!" - COLD *

* ALL SET FOR WASH BATH *

* WATER IS COLD *

* DOWN TO BASEMENT TO LIGHT OLD FASHIONED HEATER *

* LATE FOR WORK *

* FINALLY INSTALL SPECIAL GAS WATER HEATER *

* THE DOCTOR TELLS THE LIES *

Reach for a Faucet instead of a Match!

* THAT OLD FASHIONED COLD WATER HEATER *

* FATHER'S BATH *

* FATHER'S BATH *

* FATHER'S BATH *

* FATHER'S BATH *

* FATHER'S BATH *

* FATHER'S BATH *

Reach for a Faucet instead of a Match!

* READY TO SHAVE *

* WATER IS COLD *

* TO BASEMENT TO LIGHT OLD FASHIONED HEATER *

* LATE TO WORK *

* FINALLY INSTALL SPECIAL GAS WATER HEATER *

* FAMILY OF FIVE NOW HEALTHY AND HAPPY *

Reach for a Faucet instead of a Match!

* HAVE PILE OF DRESSES TO WASH *

* WATER IS COLD - CAN'T GET DRESSES WASHED *

* PUTS PILE OF DRESSES ON STOVE TO HEAT *

* LATE FOR WORK *

* FINALLY INSTALL SPECIAL GAS WATER HEATER *

* FAMILY OF FIVE NOW HEALTHY AND HAPPY *

Reach for a Faucet instead of a Match!

* RETURN FROM BATH - NO HOT WATER FOR BATH *

* NO HOT WATER FOR BATH *

* TO BASEMENT TO LIGHT OLD FASHIONED HEATER *

* LATE FOR WORK *

* FINALLY INSTALL SPECIAL GAS WATER HEATER *

* FAMILY OF FIVE NOW HEALTHY AND HAPPY *

Only \$5 DOWN
 Gives You Year 'Round Low-Cost
 Hot Water Comfort and Convenience

**CONSUMERS SPECIAL
 GAS WATER HEATER**

Get it or Please about our Free Trial offer

CONSUMERS POWER COMPANY

Only \$5 DOWN
 Gives You Year 'Round Low-Cost
 Hot Water Comfort and Convenience

**CONSUMERS SPECIAL
 GAS WATER HEATER**

Get it or Please about our Free Trial offer

CONSUMERS POWER COMPANY

Above are shown a series of six advertisements being used by most of the gas companies in the Allied Power and Light system for the promotion of water heating. This series is a rather new approach in the advertising, Donald M. Mackie, of the company, states

House Heating in a Large Way

By W. ANDREW SCULLY



W. A. Scully

MODERN! That is the by-word of the present day. It was, therefore, quite natural that the Cone Export and Commission Company should turn to gas for heating when they planned their new building in New York City. There was another very good reason why they should turn to gas—cleanliness. The entire building is occupied by wholesale textile concerns and it is imperative that the materials be kept absolutely clean.

Cleanliness was also an important factor in convincing the Grand Central Packard Garage that gas was the ideal fuel for heating. Space saving and convenience were also important factors in both these cases.

The building of the Cone Export and Commission Company is an excellent example of the modern 1929 building. The building of limestone and brick is on a corner plot 50 ft. by 100 ft. and consists of nine floors, two mezzanines, a basement, and a sub-basement.

The heating system was carefully planned from the standpoint of both appearance and effectiveness. The result is that a large percentage of the radiation in the building is concealed, which, together with the exposed radiation, totals 7000 sq.ft. of equivalent cast iron steam

radiation, and checks closely with the required radiation based on a B.t.u. loss from the building. The heating system is a two-pipe steam, operated at about one and one-half pounds pressure. The heart of the heating system is the boiler room in the sub-basement where the two boilers, the return and vent traps, the steam and return headers, and the controls are located. This room is walled entirely with white tile and the owners are justly proud of it. While it is only 19 ft. 6 in. long, 14 ft. 6 in. wide, and 10 ft. 3 in. high, it is laid out in such a manner that there is ample space for every piece of equipment. The boilers are

set facing each other, with the control motor on the side wall and the clock* on the wall opposite the door so that it is possible to see whether the boilers are operating without entering the boiler room. There is no electric wiring visible in the boiler room, the cable being run through the walls.

The two boilers are connected into a common header from which the various risers are taken off. The return and vent traps, which can barely be seen in the photograph, are behind the small boiler and feed into a return header to which each boiler is connected.

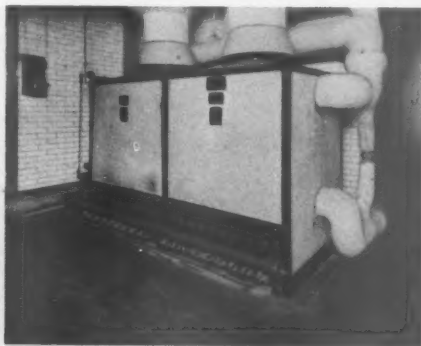
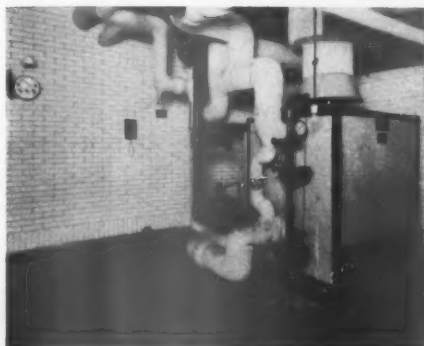
The installation of two boilers permits a fine flexibility of control as both boilers are needed only in severe weather. In mild weather the building can be heated with the large boiler, and in early fall and late spring the small boiler is sufficient to take the chill off the building. This permits the boiler in use to operate close to the point of maximum load and, consequently, maximum efficiency.



Cone Export Building

Mr. Scully is service engineer with the Consolidated Gas Co. of New York.

* For description of control, see report of Committee on Large Building Heating, A. G. A. Convention, 1928.



The small boiler and the large boiler in the Cone Export building—note controls on walls

The final touch of completeness is added by the method of identifying the piping. All gas lines are painted dark green, the steam lines are white, and the return lines are cream colored. All exposed parts of the traps, steam, and return valves are painted black. The general appearance of the boiler room is everything but what the term "boiler room" usually suggests.

building from overheating. The clock control is still the master. Yet, if it is desired, the boilers can be operated entirely by the thermostat merely by switching the clock control to the 24 hour "on" setting.

This installation has been followed closely since its installation and some very interesting data were secured. The data have been tabulated and show the following results:

Dates	Degree Days	Consumption	Sq.ft. Per Degree Day
Oct. 31, 1928—Dec. 4, 1928	629	2,269,200	.515
Dec. 4, 1928—Jan. 4, 1929	839	1,834,200	.312
Jan. 4, 1929—Feb. 1, 1929	934	1,317,200	.202
Feb. 1, 1929—Mar. 1, 1929	894	1,086,500	.174
Mar. 1, 1929—Mar. 29, 1929	571	690,500	.173

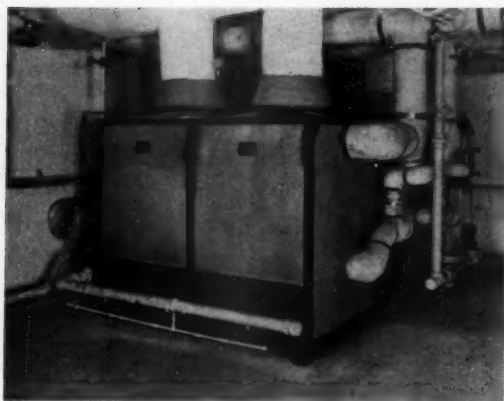
As stated before, the boiler room is in the sub-basement. This made it necessary to provide for a steady and sufficient supply of air. This was done by running a duct 14 ft. by 42 ft. from the street level to the boiler room. The outlet in the boiler room is in the ceiling just above the door. This prevents any chance of insufficient air and the resulting incomplete combustion.

The original installation of the heating system provided for control of the boilers only by the clock control. It was found, however, that it would be advantageous to combine a limiting thermostat with the clock control. A thermostat, without clock, was installed on the third floor and set for 70° F. The third floor was chosen because it is not partitioned off as are the other floors, and would, therefore, be nearer the average temperature of the building. The object of this thermostat is merely to prevent the

The building was still in the process of construction from Oct. 31, 1928 to Jan. 1, 1929. The boilers were operated almost continuously over that period to dry out the building. This explains the high constant for this period. As soon as the building was turned over to the owners, the constant took a decided drop. When the limiting thermostat was installed in February, the constant dropped still further.

The Grand Central Packard Garage building is familiar to few, but the cars it houses are known to many. This garage specializes in Packards which are rented out to people who enjoy the luxury of a high-class car and chauffeur, but dislike the bother of owning and operating a car of their own.

The building consists of the original structure and an addition which has just been built. The two structures run from one street to the next, a distance of 250 ft.



A view of the boilers in the Grand Central Packard Garage building is shown at the left. The exterior of the building is shown below. Gas heats this building and heats it well



Of the three floors, the first and second are used for storage of cars, while the third floor is used for repairing.

The entire building is supplied with steam-heated unit heaters with the exception of the office, chauffeurs' room, and paint room, which are equipped with standard cast iron radiators. The total radiation in the entire building is 7583 sq.ft. of equivalent cast iron radiation. The boiler room is in the basement, with a separate entrance from the street, as required by city law.

The system is a vacuum system, supplied by two boilers, which are connected into a common steam header and a common return. Only one boiler is operated at a time, the other boiler being held in reserve, as a shut-down of the heating system would mean the possible damage of thousands of dollars worth of cars. The building is held at 55° F. day and night by a room thermostat located in the center of the second floor. The office, chauffeurs' room, and paint shop are sufficiently over-radiated to keep them at 70° F. The data taken on this installation show very much the same characteristics as the building of the Cone Export and Commission Company, which it should do, as both buildings have practically the same amount of radiation.

The data from both these installations are experimental corroboration of the sliding scale of consumptions per sq.ft. of radiation, per season, which has been used by the Consolidated Gas Company of New York for some time. For buildings up to 2000 sq.ft. of radiation, 1100 cu.ft. is allowed per sq.ft. per season. The consumption decreases as the radiation increases, until at 7000 sq.ft., the allowance is 1000 cu.ft. per sq.ft. per season. This sliding scale is checked very closely by results on these two installations and many others which have been surveyed during the present heating season. Another point brought out by the first installation described here is that the economical way to control large building heating is the clock control with a limiting thermostat. The location of the thermostat requires even more careful selection than

Dates	Degree Days	Consumption	Cu.ft. Per Sq.ft. Per Degree Day
Dec. 13, 1928—Dec. 28, 1928	160	301,300	.248
Dec. 28, 1928—Jan. 28, 1929	530	712,400	.177
Jan. 28, 1929—Mar. 1, 1929	572	843,000	.195
Mar. 1, 1929—Mar. 29, 1929	173	268,100	.204

in domestic installations as carelessness here will lead to constant complaints. It also shows that with a proper proportioning of size and number of boilers, a fine flexibility of control is possible, as well as constant operation at maximum efficiency.

These two installations are not exceptional. There are numerous other large in-

stallations in New York such as office buildings, loft buildings, club houses, market buildings, and residences. Neither is New York alone in its large building heating. Other cities are making tremendous strides along this line. All such installations indicate the one conclusion: That house heating with gas in a large way is here to stay.

Historical Sketch, Colorado Utilities Association

By O. A. WELLER

By mutual agreement the Colorado Utilities Association has become officially affiliated with the American Gas Association, making a total of nineteen regional associations affiliated with the national organization of the gas industry.

THE present Colorado Utilities Association was organized on August 12, 1903, under the name of "Colorado Electric Light, Power, and Railway Association." At this first organization meeting several utility men who have become nationally famous were present. Judged by later achievements the one whose name would probably stand at the top of the list is that of Henry L. Doherty, at the time head of the Denver Gas and Electric Co. Irving Butterworth was also present. The session was held in the old board room of the Denver Gas and Electric Co. at 17th and Tremont Streets, Denver, Colorado.

For a period of 19 years, or until 1922, the Association bore this original name. At the annual convention of 1922 the name was changed to that of the Colorado Public Service Association. Due to the fact that in the following year the largest utility



H. S. Robertson

in the state of Colorado, together with a number of smaller companies, adopted the name "public service," the Association decided to make a further change in its name,

adopting in 1927 the name "Colorado Utilities Association."

The beautiful mountain resort of Glenwood Springs, Colorado, has long been known as the annual retreat of this state association. Out of the 26 annual conventions only six have been held at other points, these being in Denver and Colorado Springs.



O. A. Weller

Under the inspiration and early leadership of such utility men as Henry L. Doherty, Frank W. Frueauff, Irving Butterworth, J. A. Beeler, and others, the Colorado Association from its very initiation adopted a program of constructive and worthwhile activities. For many years the annual research of this utility group in the form of a carefully planned question box constituted a well-recognized authority on the problems of generation, distribution, metering, and

Mr. Weller is secretary of the Colorado Utilities Association.



Two views of the Consolidated Gas Co. of N. Y. display at the Architectural and Allied Arts show. Insulation was featured

present outgrowths of studies into these subjects initiated more than 25 years ago.

The following men have served as President:

J. F. Vail	1903
J. A. Beeler	1904
F. W. Frueauff	1905
Geo. B. Tripp	1906
W. G. Mathews	1907
J. F. Dostal	1908
Wm. T. Wallace	1909
H. L. Corbett	1910
W. E. Robertson	1911
W. N. Clark	1912
W. C. Sterne	1913
W. F. Raber	1914
John J. Cooper	1915
J. A. Clay	1916
No session	1917

(account war)

E. A. Phinney	1918
Norman Read	1919
C. A. Semrad	1920
Fred Norcross	1921
Walter F. Brown	1922
Ben S. Reed	1923
W. P. Southard	1924
E. F. Stone	1925
J. F. Greenawalt	1926
J. F. Greenawalt	1927

(6 months' term account change
Administrative Year)

H. S. Robertson	1928
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H. S. Robertson, who is serving the Association as President during the current ad-

ministrative year, is President of the Denver Tramway Company. Mr. Robertson graduated from the University of Colorado as a law student. At a later time he entered the employ of his present company in its legal department. Quickly advancing to the rank of chief counsel, then general manager, he was elected to the presidency of the company in the year 1927.

George B. Tripp served the Association as secretary at the time of its organization and for three years following. Then came a period of changing secretarial service until 1911 when Tom F. Kennedy, now general commercial manager, Henry L. Doherty and Co., assumed the secretaryship and served continuously until 1918. From 1919 to 1923 Minnie B. W. Baker was secretary. The present secretary assumed this relationship in 1924.

Those who have been members of this group from its early days not only recount a series of delightful and profitable annual meetings but unanimously agree that the spirit of the early founders and officers has been exceptionally effective in directing the work of the Association throughout its entire life into channels of constructive endeavor.

THE Pittsburgh office of the Natural Gas Department of the American Gas Association is now 1304 Clark building, according to an announcement by E. J. Stephany, secretary.

Notes On the Preparation of Drawings and Charts for Publication

MANY technical articles lose considerable of their value and reader interest because of the fact that they are accompanied by drawings and curves which are not easily legible after reduction in size to the proportions required by a printed page. With this in mind, the following notes have been prepared on the preparation of copy for reproduction purposes.

The Title and Labels

The title should be self-explanatory, and give all of the necessary information required for the interpretation of the drawing to which it is attached.

It is not necessary in preparing work for copy to print the title directly upon the drawing. This is the first important thing to note. The printing may be done on separate sheets of white paper, and these are then pasted on the drawing where desired by the use of rubber cement, obtainable from any art supply store. Rubber cement is put on the drawing and on the back of the label, allowed to dry for about 30 seconds, and then the two firmly pressed together. The excess cement which is squeezed out can be removed by rubbing the hand back and forth across it until it balls up into little aggregates which can be brushed off. The labels so pasted on can very easily be removed without in any way injuring the drawing, and the excess cement removed as first described.

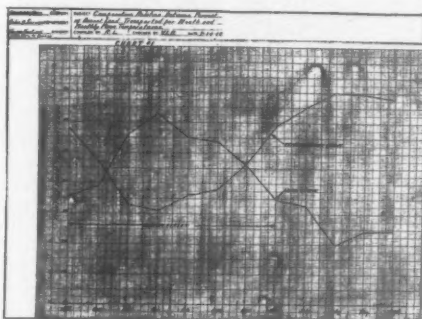
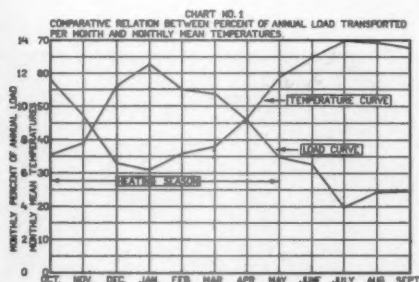
Labels on curves, special notes, legends, and all manner of printing can be done much easier on separate sheets of white paper and pasted on the copy. A black border can very effectively be drawn around all labels, and then the excess paper clipped close. This makes a very fine finished copy, an example of which can be seen on page 142 in the March, 1929 A. G. A. MONTHLY.

To illustrate this further, two charts are given below. One of these has been made up in accordance with the suggestions just outlined, and the other has been made up by merely typewriting and printing by hand the labels on an ordinary sheet of fine lined cross-section paper. It is easy to see how difficult it is to read the printing on the left hand chart.

Size of Printing

In this connection another item is of importance, and that is to make the printing sufficiently large. Printing on all curves made by the A. G. A. is done with the aid of a mechanical printing device. A celluloid stencil and a special pen are used to print the letters. These can be obtained from any large supply house for drawing instruments. Printing done in this way is uniform, very rapid, and does not require the use of guide lines.

To estimate the size of printing needed requires a little experience in the handling of material for reproduction, but an easy



The right and the wrong kind of charts for good reproduction

way to judge is to draw a diagonal from corner to corner on the back of the drawing, and outline the border of the drawing. Then lay off along the bottom border a distance equal to the size of the finished cut, which for the A. G. A. MONTHLY would be $5\frac{1}{8}$ " or $2\frac{1}{2}$ " wide, depending on whether the drawing is to be reduced to full page width or single column width. Erect a perpendicular from this point to the diagonal and complete the rectangle. This will show the size of the finished drawing after reduction, and it can be judged how small the printing will be accordingly.

In general, printing is made too small. The illustrative drawings shown here were each made in original size of 12" x 8". The lettering used in the original for the right hand chart was close to $\frac{1}{4}$ " high: The lettering on the left hand chart, which was easy enough to read in the full size drawing was about $\frac{1}{16}$ " high, the largest letters being only a little over $\frac{1}{8}$ ".

Size of Grid

The easiest way to make a drawing in an office is to use prepared grids, and for this the fine cross-section paper printed with green cross-section lines is in almost universal use. This paper has 20 cross-section lines to the inch, and is extremely easy to read in the original, because the green of the grid and the black lettering contrast very agreeably. When this is reproduced, however, one color results, and many of the fine green lines are lost. That is why it is most important to place all labels on separate pieces of paper and paste them on when work is prepared for reproduction. As a matter of fact, the originals can be prepared in this way just as easily, and they are much more effective for office use as well.

An error which the use of a prepared grid brings up is that of using too fine a grid for the work at hand. This is of no objection as long as the color contrast is visible, but is very objectionable for reproduction purposes because the use of too fine a grid decreases the readability of the curves, and gives a wrong impression of the significance of the figures shown. In the example

shown, the left hand chart drawn on a fine grid implies that relationships exist between the temperature curve and the load curve which warrant the reading of results within an accuracy of $\frac{1}{10}$ th of a degree on the temperature scale, and $\frac{1}{10}$ th of 1 per

(Continued on page 380)

Log Cabin Built Years Ago Now Uses Gas

By J. Calhoun Smith, Commercial Agent,
Consumers Gas Company, Reading, Pa.

WHEN the Consumers Gas Company, Reading, Pa., extended its distribution lines to supply gas to the towns of Kutztown and Fleetwood, Pa., to provide for new customers in those communities, the mains were laid through the quaint old town of Blandon, Pa.

In and around that town are numbers of old-type buildings, such as generally were to be found years ago, and the representatives of the company were successful in having gas introduced into some of those old buildings.

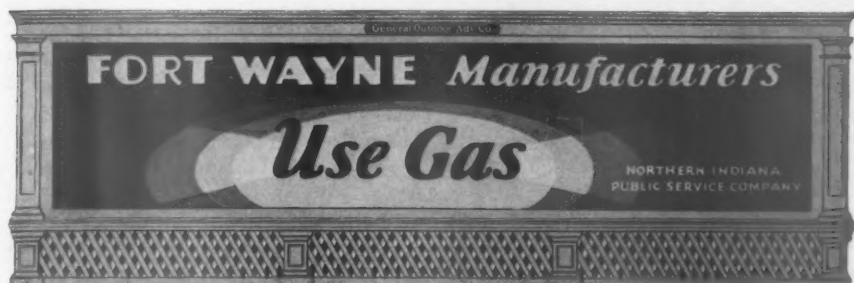
Notable among them was a log cabin, considerably over one hundred years old. The old gentleman in the accompanying photograph informed the company workmen that the log cabin was moved to its present location about sixty-five years ago from where it originally was built on the road which led from Kutztown Pike to Friedensburg, Pa. The present owners are housed in an old home, but they have the modern conveniences of gas and electricity.

Included among the other buildings to which gas was extended in passing through the town was an old farm house, a typical old-fashioned country general store and a farmers' butcher shop. In the latter are two huge kettles, which formerly were heated by wood or coal, in which scrapple and sausage are made. Those kettles now are heated by two large gas burners.

The new customers are enthusiastic about the gas fuel.



Gas is best here too



Suggested design for synchronized billboards

Plan National Outdoor Advertising for Industrial Gas

A PLAN whereby the gas industry will receive the benefits of a national outdoor advertising program has been proposed by the Advertising Committee of the Industrial Gas Section, A. G. A. John F. Weedon, of The Peoples Gas Light and Coke Co., Chicago, Ill., is chairman of the advertising committee and is in charge of this activity.

The plan is to have each of the gas companies which are located along the right-of-way of the more popular railroads divert part of their advertising appropriation to the maintenance of one or more railroad billboards in their territory.

These bulletins are to be painted in one general design, each to carry the name of the city and the name of the company operating in that territory. The design will be changed every six months, according to the plan. Above is shown a tentative sketch of what the Advertising Committee has in mind.

Mr. Weedon explains the advantages of the plan as follows:

"Every express train carries its quota of business men—executives who are keenly aware of the necessity for keeping up with the times.

"These men overlook no opportunities to get the facts. They purposely keep themselves open to all suggestions that may mean more profit to their respective industries.

"These busy, alert men will see railroad bulletins advertising industrial gas. Everywhere they go industrial gas will be presented to them as one of the most important factors in the methods of modern business.

"Not only that. You will build tremendous

good-will in your own territory for your company by advertising your city.

"No other form of advertising can give you the day-after-day continuity and steady pull offered by these railroad bulletins. And the cost is certainly small.

"These bulletins will help forward your interests and the interests of the industry. They will keep the suggestion to use industrial gas constantly before the business men of the nation."

In order to preserve uniformity and synchronize all boards, the details will be handled from the offices of the General Outdoor Advertising Co., Chicago, Ill. Bulletins will cost from \$30 to \$80 a month, according to the size and location selected.

All gas companies are urged to communicate with Mr. Weedon at once. Mr. Weedon reports that he has mailed a letter to gas companies describing the plan, and that several of the return post cards were sent back unsigned. Those companies which did this should write Mr. Weedon immediately.

FOR the benefit of the natural gas industry, the Natural Gas Department of the A. G. A. has asked the Accident Prevention Committee to prepare and publish a pamphlet covering safe practices in the construction, maintenance, and repair of high-pressure mains.

To comply with this request, A. R. Gray, of the Peoples Natural Gas Co., Pittsburgh, Pa., has prepared a questionnaire which has been sent to all natural gas companies.

All members of the Natural Gas Department are urged to fill in this questionnaire and return it promptly to Mr. Gray, to assist in the rendering of this important report.

M. I. T. Industrial Course Starts June 17

FOR the eighth successive year a special Industrial Gas Course will be given at the Massachusetts Institute of Technology, Cambridge, Mass., during the week of June 17 to 22.

This course, fostered by the Industrial Gas Section of the American Gas Association and given under the direction of a committee of the New England Gas Association, is open to all those interested in promoting the sale of gas for industrial purposes—gas company salesmen, commercial managers, advertising men, manufacturers' representatives.

In previous years the course extended over two weeks. Many who wished to avail themselves of this training were unable to leave their duties for that length of time. This year the course has been compressed into one week—Monday, June 17, to Saturday, June 22, inclusive.

The special Industrial Gas Course has been arranged this year to cover the fundamentals of industrial gas engineering and the very latest developments in the application of those fundamentals to practical industrial needs under the conditions of modern production. Five outstanding experts will hold classes in the following subjects:

1. Combustion.
2. Furnace design.
3. Burner application.
4. Insulation and refractories.
5. Report writing.

The basis for all industrial gas operations is presented, reviewed, revived, and brought up to date. Men who have never taken one of these courses will find this course of utmost practical value. Men who have taken the special Industrial Gas Course in previous years will find this year's course no mere repetition of previous courses, but just as valuable to them as the previous courses.

A complete set of mimeographed notes covering the entire course will be handed to each man on entering the course. This will permit him to devote his attention more

completely to the classwork, expand those notes intelligently, and take away with him a valuable record of his week's study.

Further information can be secured from Cyrus Barnes, treasurer, 200 Devonshire Street, Boston, Mass.

A few high spots of the program are as follows:

Prof. Gordon B. Wilkes, of the M. I. T. faculty, will give the instruction in insulation and refractories.

Frederick H. Norton, of the M. I. T. faculty, will cover the subject of furnace design.

T. A. Mangelsdorf, of the M. I. T. faculty, will lecture on combustion.

W. M. Hepburn, of the Surface Combustion Co., will give the instruction in burner application.

W. P. Ryan, of the M. I. T. faculty, will cover the important subject of report writing.

Springfield, Mass., Gets New Gas Rate

THE Department of Public Utilities of the Commonwealth of Massachusetts has dismissed the petition of the Springfield Gas Light Co., Springfield, Mass., for permission to supply gas of 500 B.t.u. standard, and has granted the company a new gas rate.

The new rate provides for a service charge of fifty cents a month per customer, plus a net maximum commodity charge of one dollar and ten cents per thousand cu.ft. of gas sold in the company's territory, except in East Longmeadow, and in East Longmeadow there will be the service charge plus a net maximum commodity charge of not more than one dollar and twenty-five cents per thousand cu.ft. of gas.

George Ramsdell is 81 Years Old

GEORGE G. RAMSDELL, member of the "Old Guard" of the gas industry and librarian of the American Gas Association, celebrated his 81st birthday on April 30.

Mr. Ramsdell received many tributes from his numerous friends in the gas industry.

At the meeting of the Executive Board of the A. G. A., on April 13, Mr. Ramsdell was the guest of honor.

Announce Program of Illinois Industrial Gas Course

A MOST comprehensive program has been announced for the fourth short course in industrial gas engineering to be held at the University of Illinois, Urbana, Ill., from June 17 to 29.

Industrial, house heating and hotel and restaurant subjects are to be handled, as well as rudimentary work in combustion, chemistry, and physics. This course is sponsored by the Illinois Gas Association, and is under the direction of a committee of which J. D. Preble is chairman.

Further information can be secured from George Schwaner, 205 Illinois Mine Workers' Building, Springfield, Ill.

The program of the course is as follows:

Monday, June 17

Registration and Introduction.

"Combustion of Elementary Fuels: Material Balances," Dr. T. E. Layng, Department of Chemistry, University of Illinois.

"Combustion Systems," Dr. T. E. Layng.

Tuesday, June 18

"Properties and Combustion of Gaseous Fuels: Combustion Calculations"—Dr. T. E. Layng.

"Principles of Furnace Design and Construction"—Professor W. Trinks, Mechanical Engineering Department, Carnegie Institute.

"Problems of Forging and Rivet Heating"—E. G. de Coriolis, Surface Combustion Co.

Wednesday, June 19

"Furnace Efficiency and Distribution of Heat Losses: Calculations"—Dr. T. E. Layng.

"General Principles of Metallurgy and Problems of Carburizing and Heat Treating"—R. G. Guthrie, The Peoples Gas Light and Coke Co.

"Problems of Annealing"—W. O. Owen, Surface Combustion Co.



The campus at University of Illinois

Thursday, June 20

"Furnace Efficiency and Distribution of Heat Losses: Calculations" Dr. T. E. Layng.

"Burning Common Brick and Refractory Brick"—Professor R. K. Hursh, Ceramics Department, University of Illinois.

"Vitreous Enameling"—Dr. A. I. Andrews, University of Illinois.

Friday, June 21

"Competitive Fuels: Problems"—Dr. T. E. Layng.

"Soft Metal Melting and Brass Melting"—C. J. Levey, National Machine Works.

"Temperature Control and Thermometers"—O. M. Olson, Eclipse Fuel Engineering Co.

Saturday, June 22

"Distribution Systems and Meters"—M. I. Mix, Superintendent of Distribution, The Peoples Gas Light and Coke Co.

Monday, June 24

"Low Temperature Industrial Heating Applications"—W. A. Darrah, President, Continental Industrial Engineers.

"Analysis of Industrial Heating Problems"—W. A. Darrah.

"Selection of Industrial Heating Equipment"—B. H. Roberts, Rockford Gas Light & Coke Co.

"Volume Water Heating"—C. H. Light, Manager of Water Heating Division, The Peoples Gas Light and Coke Co.

Tuesday, June 25

"Problems in Food Products"—

"Hotel and Restaurant Selling"—T. J. Gallagher, Manager of Hotel and Restaurant Division, The Peoples Gas Light and Coke Co.

"Advertising Industrial Gas"—J. R. Pershall, Manager, Advertising Department, Public Service Co. of Northern Illinois.

Wednesday, June 26

"Refrigeration"—H. C. Wandas, Assistant Mgr. Refrigeration Department, The Peoples Gas Light and Coke Co.

(Continued on page 381)

Iowa Amends Law on Utility Securities

THE Iowa Legislature has enacted into law a measure making more reasonable the requirements for the investment of life insurance company funds in the securities of public utilities. The requirements were formerly so rigid as to bar the securities of first-class reputable companies.

The changes are summarized as follows:

1. The original statute required that the bonds of utility corporations would be acceptable, only if not more than 25 per cent of the gross revenue was derived from properties operating under: (a) Franchises extending less than five years beyond the date of the maturity of the bonds; (b) and/or under an indeterminate franchise.

Giving effect to the recent amendments, these bonds are acceptable, in lieu of the requirement just mentioned, if the net earnings of the company have been at least two times the interest on the present mortgage indebtedness, for each of the three years preceding the date of the purchases.

2. The statute originally required that the bonds would be acceptable for investment only in event their net earnings had averaged $1\frac{3}{4}$ times the interest charges on the total funded

debt, for five years preceding the date of the purchase. As amended, the bonds will be acceptable, if the net earnings have averaged twice the interest charges on the total mortgage debt.

3. It was originally required that the funded debt of the company shall not exceed 60 per cent of the reasonable value of the properties, as shown by the books of the corporation. Giving effect to the amendments adopted by the last legislature, the bonds are acceptable if the mortgage debt does not exceed 55 per cent of the reasonable value of the property.

4. It was previously required that the bonds would not be acceptable, if the funded debt exceeded 70 per cent of the total value of the company's assets. As amended, the bonds will be accepted, if the mortgage debt shall not exceed 55 per cent of the total value of the assets.

The statute, as amended, will permit the investment of funds of life insurance companies in the securities of certain reputable utility companies, which heretofore could not qualify under the statute.

THE fortieth annual convention of the Heating and Piping Contractors National Association will be held June 10, 11, 12, and 13. Meetings and headquarters will be at the New Jefferson Hotel, St. Louis, Mo.

A modern version of an old adage—surely there is a moral here for every industry doing business today. (Reproduced by special permission of the Saturday Evening Post. Copyright, 1929, by the Curtis Publishing Co.)



The Operation, Testing, and Efficiency of Conversion Systems

By C. GEORGE SEGELER

This is the third and last part of a chapter on conversion equipment which appears in the third printing of the second edition of the American Gas Association Industrial Gas Series books. Parts 1 and 2 were printed in the April and May issues of the MONTHLY.

—Editor.

BEFORE considering the actual data which are being reported on converted installations, it is well to reiterate some cautions about the use of comparative unit figures without due consideration of the conditions involved. For example, if reference is made to earlier sections of this book, it will be found that there is given in Chart 4 the cu.ft. of gas required per degree day for various types of heating systems, based on a temperature designed for 0° outside and 70° inside. If, for example, a comparison was made between results obtained in a northern city where the outside design temperature was -10°, and some southern place where the outside design temperature was +10°, it would be very misleading unless proper attention was paid to the application of the correction factors shown in the text of Chart 4. This is of the greatest importance, and is mentioned here because some data presented have not taken these facts into account.

It can be seen that data in the hands of persons who are not familiar with the use of such figures could very easily show surprising results. In northern cities, if the figures shown in the chart mentioned are not multiplied by the factor, surprisingly good results would be obtained if, for example, a conversion system installed there were to be compared with a gas-designed system located in a southerly locality. The results would undoubtedly show that the converted system was much more efficient than the gas designed system, while in actual fact the reverse may be the case.

A proper interpretation of unit gas consumption figures involves more than a

knowledge of design temperatures. It is most important in doing comparative work to know that the correct amount of radiation has actually been installed in the building, and the temperature maintained at 70°, or at least at some known level, etc. A building may require, for example, 500 sq.ft. of radiation, but if a part of this should be shut off, the resulting unit figure would naturally be much too low. On the other hand, some figures which apparently reflect unfavorably on the conversion burners are probably due to the fact that the inside temperature maintained by the owner is higher than 70°. In all of these considerations, thought may be given to the problems of thermostat location which have been discussed elsewhere in this book.

Actual results on conversion systems will not be reported in this edition, but will be considered in detail in the Third Edition of this book.

The Testing of Conversion Systems

In reporting the test results of converted systems, it is important to remember a distinct difference between the laboratory efficiency and the actual efficiency which will be obtained over a heating season because of the variation of the heating load. An article by D. S. Reynolds in *Gas Age Record*, March 3, 1928, showed a test on three boilers of 300 sq.ft. rating with 79.4 per cent efficiency operating continuously, 74.3 per cent efficiency operating 30 minutes on and 30 minutes off, 69.4 per cent efficiency 30 minutes on, 60 minutes off, and 65.5 per cent operating 30 minutes on, 90 minutes off.

The entire problem of efficiency is a dangerous one to mention in connection with conversion equipment. The publishing of unduly high results does harm rather than good, and it reflects upon the entire industry. A number of tests have been reported, for example, using running water entering

a steam boiler at a very low temperature and discharging at about 160°. Tests of this character, run for a period of about 1 hour—in an extreme case, 10 minutes—have absolutely no meaning whatsoever. The method of testing gas-fired equipment for efficiency is clearly outlined in a subsequent chapter in this book, and should be scrupulously followed whether considering a gas-designed steam boiler or a conversion system.

The Efficiency of Conversion Systems

The efficiency of conversion systems cannot be studied without a knowledge of the entire theory of gas combustion. Space does not permit going into this in detail here, but the reader is referred to the A. G. A. handbook "Combustion."

The following points must be borne in mind, however, in dealing with gas combustion.

1. The heat input can be accurately metered.
2. There must always be a flue gas heat loss in order to provide enough draft to carry the products of combustion out through the stack.
3. Heat transfer from gas flames takes place by radiation, conduction and convection, the proportion of radiant effect being unknown.

Recent investigations indicate that the radiation effect may be larger than formerly suspected. A scientific study of conversion systems would involve a complete evaluation of this radiant effect.

4. The use of radiant elements of clay or metal adjacent to the gas flames is not an example of the radiation of gas flames. That type of device is an application of heating of the clay or the metal by convection and conduction (with some radiation, possibly), and then allowing the material in question to serve as a radiator. This plan could not raise the rate of heat transfer from gas to the boiler water because the rate at which the radiator absorbed the heat would be slower than the rate at which the boiler heating surface could absorb the heat directly. The purpose of the heat deflectors

has been discussed in connection with the types of conversion systems which employ them.

5. To find whether combustion is perfect or not requires the use of a suitable gas analysis apparatus. In the field, the Orsat analysis described in "Combustion" will prove satisfactory. To insure compliance with the A. G. A. requirements as regards flue products from central house heating equipment seems to be impossible at the present time unless a number of samples are taken and sent to laboratories possessing an iodine pentoxide apparatus which will measure values of carbon monoxide under 0.1 per cent.

6. The measurement of flue temperatures by the use of ordinary mercury thermometers set radially into the moving flue gas stream will yield results considerably below the true value. No practical method has been devised that will get the correct reading easily. Correction for emergent stem, for variation in temperature over the cross sectional area of the flue, for low reading due to resistance to flow around the bulb of the thermometer, for losses by conduction along the thermometer stem, and for loss by radiation by the thermometer bulb, are difficult to evaluate. A few experiments tried along these lines indicate that 50° difference between the real temperature and the temperature as read is not extraordinarily large.

There are many factors which must be considered in making a conversion system as efficient as possible. These can be taken up in order, but they can be separated into sections for the sake of clarity. Actually, these factors overlap one another and tie in one with the other so they should not be really separated save for purposes of classification.

1. Burner Design

Of fundamental importance is to have a properly designed burner. House heating takes relatively large quantities of gas, and it is not at all easy to design burners which shall have a capacity up to perhaps 300 cu.ft. per hour and still be capable of fitting into a 24-inch round fire pot. In order to

burn such a large quantity of gas in so small a space, care is necessary in the design of the burner and its mixer. Regrettably, many of the existing conversion systems have not taken all of the features of burner design into account. The idea of a gas burner is to use the momentum of the gas coming out of the gas orifice to draw in as much primary air as possible. Good design, then, starts with the proper design of the gas cock and orifice, and carries all the way through to the size of the burner ports used. The primary air-gas ratio of a good burner is high, and this keeps down the amount of secondary air required in excess of the theoretical.

2. Over-ventilation

The causes for over-ventilation are numerous, and space does not permit mentioning all. The principal ones include:

(a) Failure to use a back-draft diverter in the flue. This permits the full chimney draft to be exerted on the boiler, and will result in pulling in great volumes of excess air through every opening in the boiler. Some boilers are designed poorly and need the pull of the stack to enable them to burn the requisite amount of gas. If reference is made to the A. G. A. Approval Requirements for Central House Heating Appliances, it will be seen that the draft permissible is only that produced by the appliance itself, and conversion equipment should be so designed and so installed that it will operate satisfactorily without any stack pull whatsoever.

(b) The use of a damper in the stack is not looked upon with favor. The hazard involved should condemn the use of stack dampers with gas-burning equipment.

(c) When the conversion job is completed, it is important to close up all excess air openings above the requirements for successful operation. Leakage through the old ash pit or ill-fitting clean-out doors are very likely to allow excess air in considerable quantities to enter the combustion chamber.

3. Heat Transfer

The problem of heat transfer from hot gas to warm air or boiler water is compli-

cated by many technical considerations. The principal resistance to the flow of heat from the gas side to the water side is in the small dead flue gas film.

The problem also includes the following items: Temperature difference between the gas and the object being heated; area; time of contact; velocity of flue gases; condition of the surface with respect to smoothness; conductivity of the heating surface; and many other factors.

In most flue passages a core of rather quiescent gas will pass up through the center. The heat in this gas does not become available very readily to the heating surface, but passes right into the stack. To reduce these losses the scrubbing effect of the flue gases must be heightened as far as possible. Methods for doing this involve baffling, and the use of so-called "core-busters," but these devices tend to add to the expense of the installation, and are, therefore, frequently disregarded in making conversions.

The purpose of the refractory or metal radiators is essentially to keep the flue gas passage narrow by forming a retaining wall through which these must pass. Incidentally, the area of the passage tapers, which is in accord with the effect of reducing the flue gas volume as the temperature of the flue gases becomes lower. Thus, the high velocity is maintained and the flue gases give up their heat very rapidly to the heating surface. Of course, such heat as is absorbed by the radiant elements is promptly returned to the boiler water.

In the types of conversion systems where the gas flames play under a metal plate on top of which radiant elements are laid, or in which the gas flames play directly on a mass of incandescent fireclay, the same reasoning will not apply. The attempt to simulate a coal bed has not resulted in satisfactory conversion systems. There does not seem to be any theoretical reason for trying to imitate the coal bed, and there are many practical reasons why failure has attended the attempts. Where the flames play underneath the radiant bed, there is a tendency for the burners to smother, owing to re-

(Continued on page 370)

The Monthly Tabloid—Personal and Otherwise



J. B. Klumpp

John B. Klumpp has resigned as a vice-president of The United Gas Improvement Company, Philadelphia, Pa., after thirty-five years of continuous service. The resignation was effective May 1.

Mr. Klumpp has opened an office as utility consultant in the Fidelity-Philadelphia Trust Building.

After graduating from Stevens Institute of Technology in 1894, Mr. Klumpp began work in the engineering department of the U. G. I. From 1904 to 1919 Mr. Klumpp made examinations and reported on all the utility properties, both gas and electric, which The United Gas Improvement Company investigated and purchased. He specialized in legal engineering, valuations, and rate matters. In 1924, Mr. Klumpp was made assistant general manager of the U. G. I. and he has been a vice-president for the last five years.

Mr. Klumpp has served as President of the American Gas Association and is a member of the Executive Board of the Association.

Conrad N. Lauer has been elected a vice-president of The United Gas Improvement Co., and president of The Philadelphia Gas Works Co., to succeed Paul Thompson, retired after more than thirty years in U. G. I. service. Mr. Lauer also has been appointed a member of the Philadelphia Gas Works Commission succeeding Mr. Thompson.

The Gas Commission, created under the lease between the City of Philadelphia and The United Gas Improvement Company, has jurisdiction over the price charged for gas in Philadelphia and has other supervisory duties in connection with the operation of the municipal gas works as set forth in the lease. The Commission consists of three members, one appointed by the Mayor, by and with the advice and consent of Council, one by the gas company and the third by the other two. Mr. Lauer represents the gas company on the Commission.

Mr. Lauer has been vice-president of Day & Zimmermann, Inc., for many years, and has a country-wide reputation as an industrial engineer.



C. N. Lauer

In 1893, he entered the employ of the Link Belt Co., where he advanced to plant superintendent. In 1902, he became associated with Dodge and Day, and with its successor companies, Dodge, Day & Zimmermann, and Day & Zimmermann, Inc., has served as general manager, member of firm, secretary, treasurer, and vice-president.

During the World War Mr. Lauer served as chairman of the Industrial Committee in Philadelphia for the second and third Liberty Loan Campaigns, and was actively identified with this work for the fourth and fifth campaigns. During the War period he also was in charge of important construction work at Erie and Philadelphia under Government contracts.

Mr. Lauer is the author of "Engineering in American Industry" in which he traces the development of some of the more important American engineering contributions to the industrial development of the race.



O. E. Barene

Otis E. Barene, who for the last five years has been connected with the gas industry in the capacity of sales engineer, developing house heating and industrial sales, is now associated with the Richmond Radiator Co., New York, N. Y. He is engaged in the sale and distribution of the gas-fired boiler product of the company, and will also handle large water

heaters for apartments, etc.

He has also had three years' experience in vocational work. Right after the war he entered this profession, training disabled ex-service men for the metal trades.

F. M. Milward Oliver has been elected vice-president of the Philadelphia Gas Works Co., the U. G. I. subsidiary operating the city's municipal gas works.

Mr. Oliver, who had been with Day & Zimmermann, Inc., since 1922, has had unusually broad experience in public utility operation and management. In 1909 he joined the Traction Gas & Electric Finance Co. of New York and in 1913 became secretary and treasurer of the Erie Lighting Co., Erie, Pa. With Day & Zimmermann, Inc., he was vice-president and treasurer of utility properties managed by that company in various parts of the country. He is treasurer of Day & Zimmermann Securities Corp.

Harold L. Geisse has been elected vice-president of the Wisconsin Valley Electric Co.

Edmund W. Wakelee, vice-president of The Public Service Electric and Gas Co., Newark, N. J., has been appointed a member of the Palisade Interstate Park Commission.

Halford Erickson, vice-president of H. M. Byllesby and Co., has made the following announcement relative to the resignation of A. W. Robertson as President of the Philadelphia Company, of Pittsburgh, Pa., and affiliated corporations.

"Until further action of the board of directors of the Philadelphia Company, Thomas Fitzgerald, vice-president, Pittsburgh Railways Co., will direct all the transportation companies; C. S. Mitchell, vice-president, will be in charge of all accounting matters of the Philadelphia Company and affiliated companies; and F. R. Phillips, vice-president, will direct the operations of all other companies in the system."

Andrew J. Wallbillich has been made appliance sales supervisor of the Albany District of the New York Power and Light Corp. He succeeds Theodore P. Federer, who has held this position since the formation of the New York Power and Light Corp., and who has been transferred to The Syracuse Lighting Co., Inc., to take up a similar position.

Mr. Wallbillich comes to Albany from Glens Falls, where he was appliance sales supervisor of the New York Power and Light Corp. in that district. During his ten years' association with the company he has been connected for the most part in sales promotional activities.

L. A. Sommar has been elected an assistant secretary of the United Gas Improvement Company, Philadelphia, Pa.

Mr. Sommar has been in the employ of The U. G. I. Company since 1902, when he started in the accounting department. In 1912, he became private secretary to the secretary of the company. He was appointed secretary of the management committee in 1927.

E. C. Masterson, who has been production superintendent of the Phoenix Oil and Transport Co., Phoenix, Arizona, is now in charge of natural gas distribution in Ploesti, Roumania.

Mr. Masterson, when in New York previous to sailing, said "gas service was inaugurated in old Roumania for the first time within the past few months." He also said it would be necessary to import all gas appliances.



H. R. Sterrett

H. R. Sterrett has been elected vice-president and general manager of the New Haven Gas Light Co., New Haven, Conn., to succeed J. Arnold Norcross, who resigned on April 17, according to announcement by Clarence Blakeslee, President and chairman of the gas company Board of Directors. He will take up his new duties immediately.

Mr. Sterrett comes to New Haven from Ardmore, Pa., where he had been vice-president of the Philadelphia Suburban Counties Gas & Electric Co., in charge of gas and electric operations in the main line suburban territory of Philadelphia. Previously he was President of the Des Moines Gas Co., Des Moines, Iowa.

The new officer, who was born in Philadelphia, has had unusually thorough training and broad experience in public utility operation and management in Philadelphia and suburbs and in Des Moines. Following his graduation in mechanical engineering from the University of Pennsylvania, he entered the employ of the Philadelphia Gas Works. Subsequently he went to Des Moines, where he served successively as engineer, manager, vice-president, and President of the Des Moines Gas Co. In July, 1928, he resigned as President of that company to become vice-president of the Philadelphia Suburban Counties Gas & Electric Co.

While in Des Moines Mr. Sterrett was active in civic affairs. He was vice-president of the Chamber of Commerce, chairman of the Des Moines Industrial Committee, director of the Des Moines Convention Bureau, and a member of the Greater Des Moines Committee, and served a term as President of the Mid-West Gas Association.

H. A. Doering, who has been secretary of the Westchester Light Co., Mt. Vernon, N. Y., has been named vice-president of the company.

Wm. L. Diehl, for several years secretary of the Bronx Gas and Electric Co., Bronx, N. Y., has been appointed to succeed Mr. Doering as secretary of the Westchester Lighting Co., Mt. Vernon, N. Y.

Edwin North, purchasing agent of the Westchester Lighting Co., Mt. Vernon, N. Y., has been made assistant secretary and purchasing agent of the company.

John A. Weiser, for the past two and a half years vice-president and manager of the Peoples Light Co. of Pittston, Pa., has resigned to become vice-president and general manager of the



L. A. Sommar

Carolina Gas & Electric Co., which is a holding company for the Allied Power and Light Corp. in North Carolina. Mr. Weiser will have charge of all operations of the company.

James J. Moffett, who has been sales manager of the Peoples Light Co., of Pittston, Pa., has been advanced to the position of manager.



E. H. Bauer

EDWARD H. BAUER has resigned his position as general manager of the Worcester Gas Light Company, Worcester, Mass., effective May 1st, to join the Electric Bond and Share Company's organization and has already departed on a trip of investigation in connection with some of that company's interests in South America.

Mr. Bauer has long been an active member of the American Gas Association and is at present chairman of the Committee on Education of Gas Company Employees.

Victor Starzenski, manager of the Schenectady Division of the New York Power and Light Corp., since 1927, has been appointed gas engineer with headquarters in Albany. Mr. Starzenski assumes the duties of his new position on June 1.

Mr. Starzenski's successor at Schenectady will be Louis C. Smith, now manager of the Mohawk Division of the New York Power and Light Corp. with headquarters at Gloversville. Mr. Smith was formerly President and general manager of the Fulton County Gas and Electric Co., one of the companies consolidated to form the New York Power and Light Corp.

Mr. Starzenski came to Schenectady in July, 1908, as cadet engineer in the old Mohawk Gas Co. In 1912 he was made superintendent of the gas department of the Mohawk Gas Co. In 1916, he was made assistant general manager of both the Mohawk Gas Co. and the Schenectady Illuminating Co. Upon the organization of the Adirondack Power and Light Corp. in 1920, Mr. Starzenski became general superintendent of the gas department.

The following year, 1921, he was appointed resident manager of the Adirondack Company's Schenectady District, continuing in that position until his appointment as manager of the Schenectady Division when the New York Power and Light Corp. was organized.

Mr. Starzenski has been active in the civic life of Schenectady. He is a director and past president of the Humane Society of Schenec-

tady, a member of the Board of Governors of the Community Chest, past director of the Chamber of Commerce, President and chairman of the operating and finance committees of the Schenectady Airport, a member of the City Planning Commission, and Chairman of the Schenectady Open Forum.

Official announcement was made recently by J. C. DeLong, President of The Syracuse Lighting Co., Inc., Syracuse, N. Y., of the appointment of Theodore P. Federer as merchandising manager of the company.

As merchandising manager, Mr. Federer will have charge of the Company's sales promotional activities, including the sale of domestic and other appliances, both gas and electric.

Mr. Federer goes to Syracuse from Albany, where he has for the past two years been supervisor of appliance sales of the New York Power and Light Corp. in the Albany district. He has had extensive experience in electric and gas appliance merchandising, both with the Cohoes Power and Light Corp. and the Adirondack Power and Light Corp. at Schenectady.

A farewell dinner was tendered him by 64 associates at Albany on May 14, on which occasion he was presented with a chest of silver.

Jerry S. Stover has been appointed sales manager in charge of the new business department and all sales promotional activity of the Utah Gas and Coke Co., Ogden Gas Co., and Wasatch Gas Co., according to an announcement of L. Fitzpatrick, vice-president and general manager. The appointment fills the position formerly held by C. L. Bougher.

Mr. Stover has had wide experience in the natural gas industry, having been associated with the Lone Star Gas Co. of Dallas, Texas, for the past ten years. He has been identified in various branches of field activity as well as the sales and advertising departments of the natural gas industry.

The sales and appliance departments have been enlarged under Mr. Stover's direction in anticipation of the heavy demands resulting from the introduction of natural gas into the Salt Lake valley this fall.

Fred Karr, who has been acting as general manager of the St. Joseph Gas Company of St. Joseph, Mo., has been elected to that position. B. C. Adams is president; W. A. P. McDonald, vice-president; R. D. Garver, vice-president; Harry Warner, secretary-treasurer; J. R. Abecrombie, assistant secretary-treasurer; E. E. McWhiney, assistant secretary; T. A. Wallace, assistant treasurer.

Mr. Karr supervised the change from manufactured to natural gas in St. Joseph on January 14, 1929.

Affiliated Association Activities

Wisconsin Utilities Association



G. W. Van Derzee

THIS Association follows a unique custom of holding no annual general convention, confining its meeting activities to the different sections of the Association. The election of officers is conducted by mail and the returns from a recent election held in this manner names the following officers for the coming year:

President, G. W. Van Derzee, the Milwaukee Electric Railway & Light Co.; vice-president, M. H. Frank, Wisconsin Power & Light Co.; treasurer, Ewald Haase, Milwaukee Gas Light Co.; chairman public relations section, E. J. Steinberg, The Milwaukee Electric Railway & Light Co.; vice-chairman public relations section, A. J. Goeden, Wisconsin Public Service Corp.

New Jersey Gas Association



R. A. Koehler

heavy duty broiler.

Two outstanding papers on rates were presented. One was by H. H. Agee, rate engineer of The Public Service Electric & Gas Co., on "Social Trends and Economic Conditions and Their Effect on the Rates to be Charged for Gas," and the other was by J. P. Leinroth, general industrial fuel representative of the same company, on "More Equitable Gas Rates and Their Relation to Gas Sales." The papers without exception were all informative and well prepared.

Officers elected were as follows: President, Robert A. Koehler, The Public Service Electric & Gas Co., Newark; first vice-president, Chester Grey, Atlantic City Gas Co., Atlantic City; second vice-president, Louis Stoecker, The Pub-

lic Service Electric & Gas Co., Newark; secretary-treasurer, Herbert E. Cliff, The Public Service Electric & Gas Co., Newark.

Directors for two years: R. R. Young, The Public Service Electric & Gas Co., Newark; Jacob Jones, Bridgeton Gas Light Co., Bridgeton; John D. Alden, General Engineering & Management Corp., New York. Directors for one year: E. J. Menery, Peoples Gas Co., Glassboro; Raymond W. Lee, Cumberland County Gas Co., Vineland; John A. Clark, The Public Service Electric & Gas Co., Newark.

Southern Gas Association



D. H. Levan

ALARGE attendance was recorded at the 21st annual convention of the Southern Gas Association held in Memphis, Tenn., April 23 to 25. The convention was divided into three sections, comprising the general sessions, the commercial section and the production and distribution section. Striking addresses and splendid papers were presented at each section.

At the election of the new officers of the association, D. H. Levan, Savannah Gas Co., became president; A. J. Goss, Chattanooga Gas Co., first vice-president; E. N. Avegno, New Orleans Public Service Inc., second vice-president, and G. H. Schlatter, Jacksonville Gas Co., secretary-treasurer. The following were elected directors: A. H. Rumbold, Southeastern Heating Supply Co.; C. F. Carter, Nashville Gas & Heating Co.; W. W. Winter, Southern Gas & Power Co.; W. J. O'Brien, Memphis Power & Light Co.; J. C. Altick, Savannah Gas Co.; P. C. Westfall, Mobile Gas Co.; W. F. Eve, Jr., Gas Light Co., Augusta, Ga.; J. G. Gribbel, J. J. Griffin & Co., Philadelphia, Pa.

Canadian Gas Association

THE plans for the twenty-second annual convention of the Canadian Gas Association, to be held in Ottawa, Canada, June 13-14, include some very promising papers, a big annual dinner, prominent speakers, question box, and splendid entertainment features. The official headquarters will be in the Chateau Laurier Hotel.

The morning sessions will be held in the new building of the Ottawa Gas Company which is heated with gas. Secretary G. W. Allen advises that hotel reservations be made at once.

Indiana Gas Association



C. L. Kirk

SUBJECTS ranging from "Superpower Exits for the Local Customer" to "Obtaining Data on System Operation" and "Unaccounted-For Gas" featured the three-day annual joint conventions of the Indiana Public Utilities Association, the Indiana Gas Association, and the Indiana Electric Light Association at Gary, Indiana, the first three days of May. Larger crowds than ever before were registered for the Indiana conventions were on hand for the various sessions which were held in the new Hotel Gary. The annual dinner of the three associations was held on Thursday evening, May 2.

The Indiana Gas Association, of which T. J. Kelly of the Northern Indiana Public Service Co., Fort Wayne, was president last year, was in charge of the first day's sessions on May 1. One of the distinguished guests present at the gas meeting was Oscar H. Fogg, President of the American Gas Association.

Papers presented by members of the Association and invited speakers were: "Unaccounted-For Gas," by M. I. Mix, The Peoples Gas Light & Coke Co., Chicago; "Water Heaters," by Stanley Jenks, Northern Indiana Public Service Co., Hammond; "Gas Refrigeration," by H. C. Wandas, The People's Gas Light & Coke Co., Chicago; "Industrial Furnaces," by A. F. Mitchell, Northern Indiana Public Service Co., Hammond; "A Message from Accounting Group A. G. A.," by L. D. Spragle, Interstate Public Service Co., New Albany; "Progress of Gas Engineering School," by H. C. Pepper, School of Chemical Engineering, Purdue University, and remarks by Oscar H. Fogg, New York.

C. L. Kirk, of the Citizens Gas Co., Indianapolis, was elected President of the Indiana Gas Association for the coming year.

Samuel Insull, Jr., President of the Midland Utilities Company, was one of the headliners on the program of the Indiana Public Utilities Association on May 2. Harland H. Allen of Halsey, Stuart & Company of Chicago, addressed the convention on the highly interesting and timely subject of "The Financial Efficiency of the Utility Holding Company." "Is It Worth Saving?" was the subject of a very interesting and inspiring address by James B. Wootan, editor of Public Service Magazine and Public Service Management.

The following utility men from the various branches of the utility industry in Indiana were elected to the Board of Governors of the Indiana Public Utilities Association for the ensuing year: C. H. Rottger and F. E. Bohn, to represent the telephone industry; C. L. Kirk and F. J. Haas, to represent the gas industry; R. M. Feustel and A. W. Brady, to represent the street railway and interurban industry; H. S. Morse and W. H. Durbin, to represent the water interests, and N. A. Perry and T. F. English, the electrical branch of the industry.

Michigan Gas Association

SECRETARY A. G. SCHROEDER reports that the plans for the annual convention of the Michigan Gas Association to be held at the Grand Hotel, Mackinac Island, Michigan, July 1, 2, 3, are well in hand and there is every indication that the convention will be a fine one in all respects.

A hearty invitation to attend is extended to all gas men and their wives.

Empire State Gas and Electric Association

THE annual meeting of the Empire State Gas and Electric Association will be held at Saranac Inn, Upper Saranac, N. Y., Thursday and Friday, September 19-20. As usual there will be two morning sessions with the afternoons devoted to golf and other recreation. Thursday evening there will be a banquet and dance. At the business sessions each of the Association's seven sections will report on its activities and there will be addresses by prominent speakers on topics of general interest.

The annual meeting of the Empire State Gas and Electric Association, gas section, was held April 25-26 at the Niagara Hotel, Niagara Falls, N. Y., with an attendance of approximately 100 members, with Chairman H. E. Merrill, of Tonawanda, presiding. The first business of the meeting was an interesting address by the vice-president of the Association, W. J. Welsh, of Staten Island, N. Y.

The balance of the papers presented were nearly all in the nature of committee reports, the general chairman of each committee making a few remarks and introducing the chairman of the sub-committees. Some of the departments into which the industry naturally divides itself were thus covered as for example, The Consumers Meters Committee under the direction of C. C. Atwood, Brooklyn, N. Y.; Large Industrial Meters, H. C. Deffenbaugh, Rochester, N. Y.; Gas Distribution, J. A. Noble, Lockport, N. Y.; Shop Practice, R. R. Bogie, Brooklyn, N. Y., as well as Carbonization, Boyd Smith,

New York, N. Y., and Water Gas, R. Van Vliet, Staten Island, N. Y.

The address, illustrated by lantern slides on "Servicing Gas Refrigerators" by Frank E. Vilas provoked a good discussion and caused the keenest interest on the part of those present. It was a masterly paper dealing with the development of the gas fired refrigerator and the practical experience of a large metropolitan company with this important piece of equipment. The greetings of the American Gas Association were conveyed on behalf of Managing Director Alexander Forward, and his address on "Research and the Gas Business" was read by A. Gordon King, service engineer, American Gas Association.

On Friday morning, "The Economic and Engineering Outlook of the Gas Industry" was discussed with soundness and originality by G. I. Vincent of Syracuse, who among other things pointed out the urgent need for modern rate structures and discussed the condition of the industry today as indicated by statistical analyses from which the trend in domestic and other utilization is very apparent.

The election of officers resulted as follows: Chairman, R. Van Vliet, New York & Richmond Gas Company, Staten Island, N. Y.; Vice-Chairman, M. S. Clement, Rockland Light & Power Co., Middletown, N. Y.

It was the general consensus of opinion that this meeting was one of the most successful ever staged by the gas section of the Empire State Gas and Electric Association.

About 125 representatives of the Women's Section of the Empire State Gas & Electric Association met at Ithaca on May 2nd and 3rd. The meeting was under the direction of Miss Helen A. Smith, of Rochester, chairman of the Section. A fine program occupied two business sessions during the two days. Papers on industrial and rural conditions, home economics, aviation, utility mergers and the many activities of the Women's Section for the past year were presented.

The chairman of the State Committee on Public Speaking, Frank W. Smith of the United Electric Light & Power Co., talked on the work of the committee during the past year and the opportunity offered to the women of the industry to help in this work. Mrs. Travis Whitney spoke at the banquet held Thursday evening on the subject of "A Woman Looks at the Public Utility," a fine talk with some statistics on government operation of electric companies. Charles F. Ruffner, president of the Association, spoke on utility mergers and their significance and benefit to the public. Miss Helen A. Smith, Rochester Gas & Electric Corp., was reelected chairman of the Section, and Ethel A. Conklin, Consolidated Gas Company of New York, vice-chairman.

Mid-West Gas Association



E. H. Vieregg

AS gas men from the middle western states descended upon Minneapolis to attend the 24th annual convention of the Mid-West Gas Association, they found nothing had been overlooked with regard to welcome, program, or entertainment. The meeting was held April 15, 16, 17, and under the active direction of President Louis Stein, the business meetings got

promptly under way with nearly 500 in attendance.

The election of officers resulted in the selection of E. H. Vieregg, Grand Island, Neb., president; John M. Drabelle, Cedar Rapids, Iowa, first vice-president; J. K. Swanson, Minneapolis, Minn., second vice-president; R. B. Searing, Sioux City, Iowa, secretary. The next convention will be held at Waterloo, Iowa. The Mid-West Association has always been famous for the able and comprehensive reports of its affiliation representatives, this year being no exception.

Space limitations permit but brief reference to some of the high spots of the convention as, for example, George E. Whitwell's address in which he stressed the value of advertising and home service as well as employee selling. He stressed also the need for more retail outlets and advocated modern rates with promotional features. A recent water heater campaign in which 65 per cent of all prospects were closed was described.

President Stein reviewed past events and urged "reduction to basic fundamentals attuned with the day of today." Other interesting points were dry gas and the place of propane and butane in the gas industry. A street parade of gas company equipment and floats depicting the manufacture of both coal and water gas as well as distribution and utilization, arranged by the Minneapolis Gas Light Co., was the feature of one lunch hour.

Professor H. B. Dorau spoke with ability and emphasis on merchandising, and Managing Director Forward of the American Gas Association announced for the first time some of the results obtained in brass research.

A minstrel show and dance at St. Paul, and banquet at Minneapolis at which Mayor George E. Leach was speaker, together with a sight-

seeing trip, constituted the entertainment. The music and the artists were largely recruited from the forces of the local utility companies and a very talented group they proved to be.

An important step taken on the closing day was the appointment of a representative committee to consider the question of regional advertising. That the program was varied and well balanced may be seen from the following addresses presented in addition to those already mentioned: "The Weight of Character," "Advertising," "The Power of Food," "Checking up the Prophets," "Forced Air Heating," "Automatic Controls."

Wisconsin Utilities Association

THE arrangements for the Accounting Section convention to be held in Sheboygan, Wisconsin, June 20 and 21, are most promising. Some of the speakers scheduled with their subjects are: G. C. Mathews, of the Railroad Commission on a subject to be announced; Kurwin R. Boyes, secretary of the American Gas Association, on "Employee Education;" Howard L. Smith, certified public accountant of McMurry, Smith and Co., of Madison, on "Differences in Accounting of Privately Owned and Municipally Owned Utilities;" A. J. Bohl, T. M. E., R. & L. Co., on "Depreciation and Replacements;" Ewald Haase, Milwaukee Gas Light Co., on "Scientific Rate Making;" C. E. Kohlkepp, Wisconsin Public Service Corp., on "Taxation;" Paul Hoffman, Milwaukee Gas Light Co., on "Functions of the Service Department;" W. A. Toellner, Madison Gas & Electric Co., on "The Value of Accurate Statistics," and John I. Allen, Wisconsin Gas and Electric Co., on "Field Accounting for Gas High Pressure Transmission Lines." The newly elected president of the Wisconsin Utilities Association, G. W. Van Derzee, will also address the convention. Chairman L. T. Smith will preside.

The Nominating Committee has presented the names of the following men for officers for the coming year: For Chairman, A. J. Bohl, The Milwaukee Electric Railway and Light Co., Milwaukee; for Vice-Chairman, J. E. Gray, Wisconsin Power and Light Co., Madison.

On Thursday afternoon, June 20, following the luncheon, delegates will make inspection trips to the offices of the Wisconsin Power and Light Co., and the Wisconsin Public Service Corp., in Sheboygan, and will then make a trip through the model village of Kohler with its interesting industrial plants, and proceed to the Country Club, where dinner will be served, followed by an entertainment program.

Rush Natural Gas Work in Utah

NATURAL gas construction activities are now moving ahead at rapid speed, according to L. Fitzpatrick, vice-president and general manager of the Utah Gas and Coke Company, Wasatch Gas Company, and Ogden Gas Company, who is directing natural gas progress into Salt Lake City and other Utah cities and towns.

The program calls for the immediate construction of town plants, and of supply and service mains, in addition to the completion of the large transmission lines from the extensive Hiawatha and Baxter Basin natural gas fields in Wyoming and Colorado. Work on the town plants along the transmission lines between Ogden and Salt Lake City has been started. Construction on the Kaysville distribution system is now well under way. Already more than three miles of ditch have been dug, pipe welded and laid within the city limits of Kaysville. This system taps the main line of the Wasatch Gas Company with a three-inch line just west of the city limits. It is expected that this system will be completed in the next two weeks and construction on the town plants in Layton and Farmington will be commenced in the very near future.

Progress on the large Salt Lake City natural gas belt lines is moving ahead rapidly. The Utah Gas & Coke Company's intermediate high pressure lines now tap the Wasatch Line, which circles the city, at three major city gate points.

"Having faith that natural gas will help attract industry, improve real estate, and stimulate growth in Utah cities and towns," states Mr. Fitzpatrick "we are now bending our efforts on the comprehensive program which will make natural gas available in cities and towns where franchises have been secured."

William R. Putnam, vice-president and general manager of the Idaho Power Company, Boise, since 1919, has resigned to take up new work with the Electric Bond & Share Co. in New York.

At the beginning of his career Mr. Putnam spent two years in the banking business. He entered the public utility industry as manager of the Red Wing Gas & Electric Co., and during the ten years he occupied this position he participated in the work of practically every department of the undertaking. After connections with several interests in the Middle Western and Inter-mountain states, covering a period of ten years, he became sales manager and commercial manager for the Utah Power & Light Company at Salt Lake City. Here his work was essentially of a commercial nature. He left Salt Lake in 1919 to become vice-president and general manager of the Idaho Power Company.

Natural Gas Department

S. W. MEALS, Chairman

E. J. STEPHANY, Secretary

H. C. MORRIS, Vice-Chairman

Natural Gas Convention Is Success

(Continued from page 330)

dise appliances, Mr. Bowersox spoke as follows:

"We are of the opinion that gas companies should merchandise appliances and conduct this activity in such a way as to secure the best possible relations with the dealer. It is a fallacy to think that the gas company's merchandising efforts will reduce the volume of business done by a dealer.

"It is not enough to advertise our business today and assume that we will always remain favorably entrenched in the minds of the customers. The public will remain gas-minded only so long as we keep ourselves before the world."

Those taking part in the discussion following this paper were C. J. Dodds, Peoples Light and Power Co., Lawrence, Kansas, and V. A. Ogilvie, Republic Light, Heat and Power Co., Buffalo, N. Y.

The subject of research was covered by H. C. Cooper, of Pittsburgh, Pa., chairman of the Main Technical and Research Committee of the Department. Mr. Cooper outlined in some detail the research activities of the Department and of the American Gas Association.

H. D. Hancock, of Henry L. Doherty and Co., New York, N. Y., then presented an able paper on the flow of natural gas through pipe lines. This study was divided into four parts, namely, the compilation of existing pipe line flow data, the physical properties of natural gas, the flow of gas



T. J. Strickler



P. C. Ford

NO story of the Natural Gas Department convention would be complete without tribute to Major T. J. Strickler and P. C. Ford, of the Kansas City Gas Co. Major Strickler, as chairman of the entertainment and arrangements committee, and Mr. Ford, as his capable assistant, rendered services which were fully appreciated by the 1300 delegates present. Nothing was left undone which would make for the complete success of the meeting.

through commercial pipe lines under operating conditions, and the fundamental flow relation to be determined from a field experimental laboratory. The Bureau of Mines will release a report in the near future incorporating some of these data.

"Measuring Large Volumes of Natural Gas" was presented by T. R. Weymouth, Oklahoma Natural Gas Corp., Tulsa, Okla. He told of the work of the committee on the orifice type of meter. In 1928 the study covered the effect of pressure upon

meter registration and involved an investigation of the supercompressibility of the gas. The committee finds it will be necessary to continue the work another year before definite findings can be formulated and published.

In conclusion Mr. Weymouth said:

"The work so far has shown that the existing tables are sufficiently correct to justify the delay in rendering the final report, especially when it is considered that the findings will probably be accepted as standard."

R. M. Redding, Dallas Gas Co., Dallas, Texas, presented a paper on industrial gas sales which was received with great interest by the delegates. He said that in the Southwest gas for industrial purposes falls into three broad classifications:

RESOLVED—that the Natural Gas Department of the American Gas Association extends its heartfelt thanks to Chairman H. C. Cooper and his associates of the Main Technical and Research Committee for their constructive and effective work in planning and directing the research activities of the Department; to the Gas Measurement Committee headed by F. M. Towl, M. E. Benesh, T. R. Weymouth, and the Pipe Line Flow Committee of which H. D. Hancock is chairman, for their splendid cooperation; to N. C. McGowen for his leadership in the new research work in Open Flow of Gas Wells, which we endorse and commend, and

RESOLVED—further, that we approve the recommendations for future activities of these committees and for further development of our valuable and indispensable research activities.

RESOLVED—further, that we express our approval of the comprehensive research program of the American Gas Association including industrial gas utilization, mixed gas, appliance performance, pipe joints, pipe coverings, sales policies, and accounting problems.

RESOLVED—that we commend to the industry the work and accomplishments of the American Gas Association Testing Laboratory in testing and certifying domestic gas appliances which should constitute the standards of the industry.

RESOLVED, that the thanks of the convention are due and are gladly expressed to the many who have contributed their thought, time and ability to make this meeting a success and especially to Major T. J. Strickler and F. M. Rosenkrans and the other members of the Arrangements and Entertainment Committee and the Exhibition Committee and to P. C. Ford and B. C. Adams and all of the many officials and employees of the Kansas City Gas Company, the Gas Service Company and the Wyandotte County Gas Company, who have given us such splendid cooperation; to Chairman A. W. Leonard and his associates on the Program Committee: to Chairman Arthur Booth and the Transportation Committee; to Mrs. B. C. Adams and the members of the Ladies' Entertainment Committee; to Miss Lois Upshaw of the Women's Committee; to Chairman Meals and his officers and Committee; to Managing Director Forward, Secretary Stephany and the other members of the Association staff; to our speakers; to the manufacturer and supply men exhibitors; to the City of Kansas City and his Honor, the Mayor, A. I. Beach; to the hotels and clubs; to the press; to the Convention Bureau of the Chamber of Commerce; and to all others who have done so much to make this meeting memorable to those in attendance.

Use in field for drilling purposes.
Consumption of carbon black plants.
Fuel requirements of plants of all descriptions.

Mr. Redding also discussed the rate aspect of industrial business. J. M. Patten, of the Kansas City Gas Co., Kansas City, Mo., discussed this paper.

On the evening of the first day of the convention a complimentary smoker was held in the Kansas City Athletic Club.

The Wednesday morning program opened with a paper on cracking natural gas by J. A. Yunker, Louisville Gas and Electric Co., Louisville, Ky. Mr. Yunker gave some of the history of cracking natural gas, and said in part:

"In Louisville, we have perfected a method for completely cracking natural gas to hydrogen and carbon at what are economic space velocities. Using standard blue water gas equipment, we have been able to produce a gas containing ninety per cent of hydrogen and less than one per cent of hydrocarbons. We have also been able to recover seven pounds of carbon black, which has been passed on by one of the rubber companies as suitable for the manufacture of tires, per one thousand cubic feet of natural gas processed."

Harry L. Masser, Los Angeles Gas and Electric Corp., Los Angeles, Calif., discussed this paper and gave interesting details of tests of the reforming process as conducted in Los Angeles. T. H. Kerr, Ohio Fuel Gas Co., Columbus, Ohio, also took part in the discussion of Mr. Yunker's paper.

In "Facts Relating to Natural Gas Service," J. J. O'Brien, president of the Byllesby Companies, Chicago, Ill., considered the holding company situation. An abstract of this paper will be printed in the July issue of the MONTHLY.

Distribution was the subject covered by E. A. Clark, Oklahoma Natural Gas Corp., Tulsa, Okla. Mr. Clark outlined the work of the distribution committee of the American Gas Association, and urged all to take an active part. He covered such subjects as measurement, curb box meters and their advantages, unaccounted-for gas, pipe pro-

tection, meters, welding, and high-pressure distribution.

This paper was discussed by W. G. Hagan, The East Ohio Gas Co., Cleveland, Ohio, and S. F. Magor, of Charleston, West Virginia.

The final item on the Wednesday morning program was an interesting showing of motion pictures on putting out well fires by M. M. Kinley, of the M. M. Kinley Torpedo Co., Tulsa, Okla.

The afternoon session on Wednesday was devoted to an address on gas merchandising by Ralph W. Gallagher, president of The East Ohio Gas Co., Cleveland, Ohio, and to a question discussion. Mr. Gallagher's address is printed in this issue of the MONTHLY, and all are urged to read it.

Frank L. Chase, Lone Star Gas Co., Dallas, Texas, conducted the question discussion, at which the following subjects were given consideration:

1. In what form can news be best supplied to local newspapers?
2. What are the latest developments in the use of expansion joints on welded lines?
3. What are the best methods of covering or coating pipes to prevent corrosion?
4. What control methods are used for distribution system pressure regulation?
5. What distribution system changes are needed when changing from manufactured to natural gas?
6. What metering equipment is best for large industrial customers?
7. How can the volume of gas wells best be determined with the least waste of gas or danger to wells?

Edw. F. McKay, Oklahoma City, Okla., discussed No. 1. He stated that statistics of the local company are often of real news interest, and that only news which is news in fact should be submitted. He favored the typewritten or mimeographed form for the general distribution of news stories. W. C. Grant, of Dallas, Texas, and R. S. McBeth, of Shreveport, La., contributed several valuable thoughts to the discussion of Mr. McKay's presentation.

G. O. Carter, New York, N. Y., led the discussion on question 2. The rubber and corrugated types of couplings have been



The home service booth at Kansas City

found to be very satisfactory for expansion joints. Three means of minimizing stresses in welded lines listed by Mr. Carter were: (1) laying the pipe in cool weather; (2) crowding pipe in the ditch; (3) laying pipe almost uncovered until the ground temperature is approximately reached.

W. S. Ralston, Pittsburgh, Pa., had charge of question 4. Distant control methods were dealt with. The manufacturers were complimented upon the progress made in developing pressure regulating equipment.

Question 6 was handled by C. H. Waring, Kansas City, Mo. The orifice type of meter has been found to be very satisfactory when its proper application and limitations are borne in mind. There has been no general meter policy developed for industrial meters, as the individual utility must choose its own metering equipment based on the local conditions and need prevailing.

R. W. Hendee, Tulsa, Okla., led the discussion on question 7. Various closed well methods for determining well flows to get away from the waste involved in the open flow method were mentioned. During the discussion it was shown that it is not yet possible to determine the best method applicable to all situations considering all the factors involved.

Questions 3 and 5 were handled by Wm. Moeller, Los Angeles, Calif., and George Wehrle, Denver, Colo.

The high point of the social program of

the week was the annual banquet of the Department in the Hotel Muehlebach, on Wednesday evening, May 8. Those in charge of this affair had arranged a splendid entertainment program and the speakers were both entertaining and inspiring.

A feature worthy of special mention was the bringing in of several large trays which had the words "Welcome American Gas Association, May 6-9," frozen in ice with electric light bulbs inside.

Freeman T. Eagleson, of Columbus, Ohio, was the toastmaster and Edward James Cattell, of Philadelphia, Pa., and Joseph F. Leopold, of Dallas, Texas, the speakers. Mr. Leopold is manager of the South Central division of the U. S. Chamber of Commerce. His message was concerned with the question: "How Big Is Your Business Picture?" He told of the many influences of the so-called new competition, and urged the natural gas industry to "be on its toes."

The Thursday morning session opened with the report of the Wrinkles Committee, by H. J. Struth, of Houston, Texas. Mr. Struth said that 57 ideas were submitted last year, and prizes totalling \$200 were awarded for 15 of the suggestions.

J. B. Tonkin, in giving the report of the committee on the chairman's address, said that all the recommendations made by Mr. Meals were approved.

The paper on "Natural Gas Research," by N. A. C. Smith, of the U. S. Bureau of Mines, Bartlesville, Okla., was read by E. L. Rawlins. The three types of research were explained as follows: Investigations for profit, investigations to further some general purpose such as conservation, and investigations of the university type tending to add to the knowledge of mankind. Mr. Smith said:

"Many research problems face the natural gas industry today. This industry has developed to the stage where the application of engineering principles to obtain a greater degree of conservation and more efficient operation is necessary. In addition, a better understanding of the composition and character of natural gas in relation to its most efficient utilization is needed.

"Most efficient utilization of natural gas and

its products is an economic as well as a technologic problem. Remoteness of the consuming centers from the sources of supply is frequently a deciding factor in gas distribution and utilization. The technical and economic problems involved relate to extracting some of the heavier constituents other than those which go into the manufacture of natural gasoline and shipping these products to remote markets."

In taking on the engineering problems of operation, Mr. Smith mentioned the necessity of improving the technique of drilling and finishing wells. More suitable production equipment would effect greater recovery of gas and eliminate operating difficulties. The removal of water from wells will also contribute to economic production, and have a direct bearing on the producing life of wells. Mr. Smith also considered the questions of flow characteristics and open flow.

Under the subject of transmission and measurement, Mr. Smith said that research should be made to establish the effect of different velocities of flow, diameter of pipe, types of joints, internal smoothness of pipes, and the viscosity, supercompressibility, and chemical composition of the gas. He also spoke of the measurement of casinghead gas.

H. C. Blackwell, President of the Union Gas and Electric Co., Cincinnati, Ohio, next presented an address on "What the Public Expects of the Gas Industry." This will be printed in the next issue of the MONTHLY.

The women of the industry not only had the first word in the convention, since the Women's meeting which is mentioned later in this article was held on Monday afternoon, but they also had the last word. Mrs. Luella M. Fisher, of Erie, Pa., conducted an interesting symposium on home service, introducing Miss Hilda Ungericht, of Columbus, Ohio, and Miss A. Deane Dowell, home service counsellor of the A. G. A.

The report of the final resolutions committee was given by F. F. Schauer, of Pittsburgh, Pa.

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Some Future Needs

(Continued from page 340)

wastes in that industry affect us directly. In fact, I think perhaps the greatest economic waste in the oil business has been through the dissipation of our great natural gas resources.

Last year there were approximately 22,000 wells drilled in this country in the search of oil. Of this number over one-half produced gas in varying quantities and in untold instances much of this gas was blown in the air and all or a part of it wasted or used very uneconomically. Competent engineers have estimated that in the Mid-continent field alone there has been wasted in the last ten years a sufficient amount of gas to take care of the present household requirements of this section of the country for perhaps fifty years. The waste has been so serious in this section of the country that large pipe line companies have been forced continuously to extend their lines farther and farther away from their markets in order to secure adequate supplies to take care of their business, and gas is now being piped into Kansas City and St. Joseph from the great Panhandle field of Texas, 500 miles away, while under proper conservation methods gas might have been produced in areas contiguous to this section for years to come and the great reserves of the Panhandle saved for future generations.

The waste of natural gas, however, has not been confined to this section of the country alone. Perhaps the waste in the Panhandle has been even more serious.

The Panhandle oil field was first discovered in 1919. Within a few weeks of the drilling in of the discovery well, this section was the scene of intense drilling activity and within comparative few months hundreds of wells were bored, many of which produced large quantities of gas. Most of the drillers here were not interested in the production of gas and there was no ready market contiguous to the field to absorb the large quantities of gas produced. As a result, the drillers in many instances allowed the wells to blow in the air, hoping

that by such procedure they might blow in oil wells. It is estimated that at one time there was as much as seven hundred fifty million cubic feet per day of very valuable natural gas being blown into the air and it is conservatively estimated that since the bringing in of the Panhandle field there has been wasted in this field alone enough gas to take care of the normal requirements of this section of the country for 75 years.

In using the word "waste" in this discussion, I have used it in its broadest sense, for in my opinion the improper use of or dissipation of any valuable natural resource is wasteful.

In pointing out the wasteful practices above, I do not mean to level a general indictment against all petroleum producers, for they are not solely to blame for this condition. As most of us know, the constitutions and laws, both Federal and State, are for the most part designed and drawn for the protection of life and property. When most of the constitutions were written and the laws enacted, little or nothing was known about the science of the production of petroleum or natural gas. When the first Drake well was drilled in 1859 and for a long time thereafter, most people believed that, when an oil pool was discovered, it meant that an underground stream of petroleum had been tapped. Only in comparatively recent years have we applied the science of geology to the locating of oil and gas reserves and the production of them, and learned by careful study under what conditions oil and gas exist in their natural state. It is not strange, therefore, that the laws, both Federal and State, do not make adequate provision for the proper conservation of our oil and gas resources.

As you know, the law of capture applies to our business. This same law applies to only two other kinds of property, wild birds and game, and fish. The application of this law to our business is manifestly unfair, and the time has come now when a knowledge of this business would permit the design of more equitable legislation, properly protecting our rights. The time has come when most prominent oil

and gas technicians realize that oil and gas pools should be developed as units.

More than six years ago Henry L. Doherty, through original research work done by him, proved the soundness of this principle and advocated its immediate adoption in order that further waste in these lines of business might be prevented. At first he received little or no support from the leaders of the oil business or from their technical staffs. But, in the time that has elapsed since his original discovery and recommendations, on this point, the industry has come to practically a unanimous conclusion that such a method of handling our production is the only safe, sane, fair and logical one. In recent months the most important leaders of the oil industry have been devoting most of their time and effort to trying to stop, through various methods which they thought might be effective, the great flood of oil which has carried with it the waste of our gas and oil resources.

In some sections of the country attempts have been made to secure cooperative agreements of operators, but this method has proved impracticable. Those of us who are active in the production end of the business know how difficult it is to get 100, 50, 25 or even 10 land owners to agree to any fixed program with respect to the development of their lands. In other sections attempts have been made to secure the cooperation of state regulatory commissions. This method has proved ineffective, for it has been demonstrated that such commissions have no authority to exercise complete control and, even if they had, the control or conservation of petroleum or gas in one section would insure no control whatsoever in other oil and gas producing areas, and a general conservation plan could not be enforced by a single state committee.

Realizing at the beginning the difficulties incident to the passage of uniform state conservation laws adequately covering our production problems and, further realizing that the waste of our national resources might in years to come put this country at a great disadvantage in the event of war, Mr. Doherty advocated action by the Federal

Government to the end that our oil and gas resources might be conserved. In all the years that have elapsed there have been no other plans advanced which would adequately take care of this problem, and yet there has been reluctance on the part of the oil industry to endorse his plans. In the meantime millions of dollars in natural gas have been wasted and bills are still being piled up which future generations must pay in higher prices for petroleum and natural gas, and partial substitutes. No substitute is as good as petroleum or natural gas and any of them cost much more.

I have dwelt at length on the question of the proper conservation of oil and gas, for in my opinion this is the most important problem which confronts the natural gas industry. Every natural gas producer, every natural gas pipe line operator, and every natural gas distributor should be vitally interested in the greatest conservation and proper use of our commodity. I am certain that the public generally is taking increased interest in this subject, for it realizes that ultimately it will pay the bill for waste in higher prices for gas and oil for future years.

We know that our reserves of natural gas are not inexhaustible. The dissipation of each field carries with it millions of dollars of investment and new investments are necessary continuously to take care of our business. With the wasteful methods employed in the production of oil and gas, we must carefully consider the wisdom of pouring additional millions of dollars into our business if we have in mind ultimately making good with our stockholders and investors.

This convention could take no more important action in my opinion than to create a strong committee to cooperate with the oil industry in bringing about in the quickest possible time the adoption of sane conservation measures which will permit our business to be conducted at a profit and, of more importance, to insure that our tremendous, valuable resources of gas and oil are not quickly dissipated.

Accounting Section

F. H. PATTERSON, Chairman

H. W. HARTMAN, Secretary

J. L. CONOVER, Vice-Chairman

Teaching Customers to Read Their Meters

(Continued from page 332)

tisement, "He Will Show You," measuring 1260 lines, was run in the daily papers over a period of four days. Crowds still continued to come in daily, enthusiastically receiving instructions from the trained and expert meter reader.

"It's Easy To Read Your Meter," the third advertisement calling attention to the service offered to customers of the New Orleans Public Service Inc., was run in the daily papers during the third week of the campaign.

As the crowds began to diminish towards the end of March, after six steady weeks of very fine response, it was decided to bring the campaign to a close. One more 1000-line advertisement, "Can You Read Your Meter?" appeared in the daily papers. This called attention to the fact that this course of instructions in meter reading would be discontinued at the Public Service building after April 1st, although the booklets would still be available upon application.

Coincidentally with the anticipated close of this campaign, the New Orleans Federation of Women's Clubs staged a "Better Homes Exposition," at which the New Orleans Public Service Inc. contracted for two booths, one for displaying electric and gas appliances, and one for continuing their meter reading course. A booth quite similar to the one erected on the first floor of the building at the outset of the campaign was installed, with the same expert meter reader in attendance. The "How To Read Your Meter" booklets were also available at this booth. The exhibition lasted throughout the first week in April, and a steady stream of interested spectators patronized the Public Service booth. Once more, several hundred of the booklets were distributed.

The company has felt highly gratified at the enthusiastic response with which this

new service was met. Not only did the vast crowds which assembled daily to learn to read their meters serve to justify the company's belief in the project, but most particularly the general attitude of the public to this sane and logical proposition. Casual newspaper readers, in a great many instances men who would not ordinarily concern themselves with the problems of the home and the housekeeper, commented on the appropriateness of the thought behind the campaign. The advertisements themselves aroused wide attention, and even if every housekeeper in the city of New Orleans did not make an especial trip downtown to learn to read her meter, she could not help but know that she could have learned to read her meter had she but taken the trouble.

Requests for booklets to be mailed out to customers were received in gratifying numbers. Even though the campaign was officially closed at the first of April, and as this article is written it is nearing the fifteenth, requests for these pamphlets are still coming in. It is a significant fact, too, that not one booklet was given out unsolicited. The meter reader in charge of the special meter reading booth was advised not to force the booklet upon any spectator. They were not distributed promiscuously at any time. If a customer showed in any way that he was interested in learning to read his meter, the booklet was gladly furnished.

In view of the tremendous response to the New Orleans Public Service Inc. meter reading campaign, it is not too much to assume that some part of the misunderstanding that may sometimes exist between a utility company and its customers has been eliminated. Gas and electricity, it is true, are still products that you can not put your hands on, as you would a piece of meat purchased from the butcher, but the amount of gas and electricity you require can be very accurately checked, once the knowledge of meter reading is mastered. Knowing

these amounts, the monthly bill can therefore be very readily computed. Armed then with this information, it becomes most improbable for the customer to question the company's charges.

Whether or not this knowledge, once gained, will be put into practice in actually checking the consumption of gas and electricity each month, remains to be seen. That is really not so important after all. What remains of utmost importance, however, is the conviction that this company was sincere in its efforts to acquaint the people of New Orleans with the intricate details of meter reading, and is at all times genuinely interested in furnishing the best possible service to its customers. If this basic misapprehension in regard to gas and electric charges be undermined, and it is an assured fact that this meter reading campaign has gone a long way towards doing just that, then a clearer spirit of cooperation and tolerance is bound to result.

Conversion Systems

(Continued from page 355)

sistance to gas flow. Moreover, the bed becomes heated on its under side, radiating heat into the floor of the boiler, and not into the water surface at all. At the same time, heat is radiated into the burner head, and in many cases record is available of oxidizing a burner head in a few days' time, making it necessary to replace the entire equipment.

Claims have been made for surface catalysis speeding up the combustion process. These have not been fully investigated up to this time, but the indications are that there is very little surface catalysis taking place in house heating burners equipped with refractories. True surface catalysis takes place very rapidly in the diaphragm type burners, and this is so different from the usual operation in conversion equipment that the present opinion of competent engineers indicates that there is no gain in efficiency through the use of refractory for this purpose. The conversion burners are

benefitted by the fact that there is a good deal larger percentage of direct radiation from non-luminous flames than most engineers have suspected. Haslam and Hottel* report that for thick non-luminous flames above 1,500°, as much as 70 per cent of the heat transfer may take place by radiation. This is due to the fact that water vapor and carbon dioxide have emission bands of considerable energy content in the infra red end of the spectrum.

Reference to "Steam Boilers," page 73, shows that flue temperatures will be lower the higher the initial flame temperature. This was explained by Huddler in 1912 by the fact that excess air introduced oxygen and nitrogen, which have practically no radiating power. Reduction of these constituents increases the radiant efficiency of the flame, and presents a further argument for control of excess air.

4. Flue Passages of Coal Boilers Too Large in Cross-Section

The flue passages in the usual coal boiler construction are large in proportion to the heating surface which they contain. This favors stratification of flue gases, and the building up of a thick layer of relatively cool gas next to the flue surface sides. The presence of this cool layer reduces the efficiency of heat transfer. The proper way to overcome the difficulty would be to insert metal or brick baffles in the center of the flue passages, leaving an annular space for the gas passage. In practice, this cannot often be done, because the flue gas sections are irregular and difficultly accessible. Moreover, all surface above the water line is of little or no value in heating in the case of steam boilers.

It can also be borne in mind that the flue gases cool off rapidly, and as they cool they diminish in volume. If the area of a flue passage stays the same, and the volume of gas passing through it is decreasing, the speed of the flue gases will slow up. This slowing up further decreases the effectiveness of heat transfer. The proper construction would be to taper the flue passages towards their colder end.

*Transactions of A.S.M.E. Vol. 50, No. 8.

Publicity and Advertising Section**E. FRANK GARDINER, Chairman****JAMES M. BENNETT, Vice-Chairman**

P. U. A. A. Meets in Chicago

ABOUT 75 attended the annual meeting of the Public Utilities Advertising Association, held in the Palmer House, Chicago, Ill., on May 14, in conjunction with the American convention of the International Advertising Association.

William H. Hodge, of the Byllesby Engineering & Management Corp., Chicago, presided at the morning session, and H. M. Lytle, of the Chicago Rapid Transit Co., presided at the afternoon session.

The address of welcome to the delegates was given by Samuel Insull, Jr., president of the Midland Utilities Investment Co., Chicago, Ill. Mr. Insull complimented the advertising men on their honest advertising effort, and said that the utility companies would benefit greatly from it.

J. C. Barnes, of the New Orleans Public Service Inc., and president of the P. U. A. A., then gave his President's address. This will be printed in the July issue of the MONTHLY.

Following the reports of the treasurer, by Charles W. Person, The Koppers Company, Pittsburgh, Pa., and of the secretary, T. P. Pfeiffer, Byllesby Engineering and Management Corp., Chicago, Ill., these papers were presented:

"Electrical Advertising—Yesterday and Today," by T. J. McManis, assistant manager, publicity department, General Electric Co., Schenectady, N. Y.

"The Truth About Electrical Utility Advertising Expenditures," by William H. Hodge, vice-president, Byllesby Engineering & Management Corp., Chicago, Ill.

"Selling Transportation with Advertising," by H. O. Crews, supervisor of publicity, Chicago Surface Lines, Chicago, Ill.

The next paper was on "Outdoor Advertising for Gas Companies," by John F. Weedon, of The Peoples Gas Light and Coke Co., Chicago, Ill. Mr. Weedon discussed the proposed outdoor advertising

plan of the Industrial Gas Section of the A. G. A., which is described elsewhere in this issue of the MONTHLY.

The afternoon session opened with two papers on cooperative advertising. R. Bourke, manager, Electric Association of Chicago, discussed cooperative advertising in Chicago, and L. D. Gibbs, assistant head, public relations department, The Edison Electric Illuminating Co. of Boston, described a similar activity in his city.

Following reports of various committees, there was a discussion of "The Most Outstanding Developments of the Year in My Company's Advertising." L. K. Starr, of the Georgia Power Co., Atlanta, Ga., told of a special street railway campaign, and Henry Obermeyer, of the Consolidated Gas Co. of New York, talked on direct mail advertising for gas companies.

L. F. Reigel, general sales manager, Virginia Electric and Power Co., Richmond, Va., then explained the Stone and Webster monthly advertising contest and how it affects and stimulates the character of the operating company's advertising.

The last item on the program was an address entitled "Where Do We Go from Here," by F. E. Eriksen, advertising manager, The Milwaukee Electric Railway and Light Co., Milwaukee, Wis.

The following officers were elected:

President, Louis D. Gibbs, The Edison Electric Illuminating Co., Boston, Mass.

1st Vice-president, Dana H. Howard, Commonwealth Edison Co., Chicago, Ill.

2nd Vice-president, Irving M. Tuteur, McJunkin Advertising Co., Chicago, Ill.

3rd Vice-President, R. S. McCarty, Philadelphia Co., Pittsburgh, Pa.

Secretary, R. E. Haas, Columbia Gas and Electric Co., New York, N. Y.

Treasurer, Howard F. Weeks, American Gas Association, New York, N. Y.

Directors: J. C. Barnes, New Orleans Public Service, Inc., New Orleans, La.; Henry Ober-

(Continued on page 382)



At the left is shown the front cover of an attractive folder on house heating recently issued by the Rochester Gas and Electric Corp., Rochester, N. Y. The center spread of a booklet on house heating issued by the same company is shown above. These two pieces of mailing matter, which feature Rochester gas-heated homes, drew favorable editorial comment in a recent issue of *Printed Salesmanship*.

Additional Service for Our Members

THIS association has requested the Division of Simplified Practice, of the U. S. Department of Commerce, to extend its service to each of our members. This service is of particular interest to foremen, storekeepers, engineers, purchasing agents, and accountants and should be given the attention of the executives.

Over 100 simplified practice recommendations have been effected by industry and endorsed by the Department of Commerce. Acceptances have been received, covering these recommendations, from 13,096 individual firms and 1094 trade associations. Those directly concerned estimate that 10, alone, of these recommendations, are saving industry over \$300,000,000 annually.

There are many of these projects of direct interest to our members. Concentration of requirements and purchases on the simplified lines, wherever possible and practicable, should produce benefits and advantages to all elements of industry. These should redound to them in the form of lower inventories, quicker turnover, quicker deliveries, lower overhead expenses, released storage space for other purposes, and often better quality and lower prices.

Recently each member received a letter from association headquarters, inclosing a summary of these projects. This informed them as to how they can obtain these lists, free of charge, of simplified sizes, dimensions, etc., of various commodities, in which they are interested. We urge that all members of the association give this subject their immediate attention and take advantage of this service extended to them.

Lone Star Gas Plans Big Expansion Program

RAPID growth of Texas has caused the Lone Star Gas Company to plan a large expansion program for this summer. The plans call for expenditure of several million dollars and include four pipe lines totaling more than 200 miles, two large new compressor stations, remodeling of a gasoline plant damaged by fire, construction of several office buildings, building of a 24 mile telephone line, and the addition of at least a dozen cities to the distribution system.

A new office building of the Fort Worth Gas Co., one of the Lone Star affiliated companies, will be completed this summer and another building is soon to be announced in a city on the south end of the line.

The largest element of the program has already been announced. It is a proposed new 20 inch line from Petrolia to Fort Worth and Dallas which will have a capacity of 100,000,000 cu.ft. of gas daily. It will draw gas from the great Panhandle field near Amarillo.

COLONEL EDWARD G. PRATT, of Rockford, Ill., was recently tendered a dinner by his old associates in the Capital City Gas Light Co., of Des Moines, Iowa. There were present at the dinner 19 men who worked with Col. Pratt in Des Moines.

Col. Pratt was in Des Moines from 1887 to 1903, when he resigned to become vice-president and general manager of the Milwaukee Gas Light Co., Milwaukee, Wisc.

Manufacturers Section

H. LEIGH WHITELAW, Chairman
C. W. BERGHORN, Secretary

F. G. CURFMAN, Vice-Chairman

Many Manufacturers Apply for Space at A. G. A. Exhibit

DEMANDS for space at the annual A. G. A. exhibition, to be held in conjunction with the 1929 convention in Atlantic City, N. J., Oct. 14-18, are unprecedented, according to C. W. Berghorn, director of exhibits for the American Gas Association.

Already more than 65 per cent of the total space available has been reserved, and additional requests are being received at A. G. A. Headquarters daily. Manufacturers are urged to make their space selections at an early date.

As of May 27, the following companies had applied for booths:

Ruud Mfg. Company
Electric Indicator Corp.
Standard Gas Equipment Corp.
Kernit Incinerator Co.
Gas Purifying Materials Co.
L. J. Mueller Company
E. J. Lavino & Company
Lattimer Stevens Company
Estate Stove Company
American Gas Products Corp.
Cleveland Gas Burner & Appliance Co.
Detroit-Michigan Stove Co. (Jewel Division)
Dunrite Clock Device Co.
Humphrey Company
Stacey Bros. Gas Construction Co.
Homestead Heater Company
Tappan Stove Company
Johns-Manville, Inc.
Milwaukee Gas Specialty Co.
Moore Bros.
R. D. Wood & Company
Roberts & Mander Stove Co.
Sweet & Doyle Foundry & Machine Co.
Kompak Company
Safety Gas Main Stopper Co.
John Wood Mfg. Company
Victaulic Company
National Tube Company
G. S. Blodgett Company
Spencer Thermostat Company
Roberts Appliance Corp.
Mine Safety Appliances Co.
Cribben & Sexton Co.
Superior Meter Company
American Gas Journal
Alpha-Lux Co., Inc.
Roberts Brass Mfg. Co.
Patrol Valve Company

Cleveland Heater Company
Minneapolis-Honeywell Regulator Co.
Reynolds Gas Regulator Co.
McWane Cast Iron Pipe Co.
American Meter Company
Helme & McIlhenny
Nathaniel Tufts Meter Works
Maryland Meter Works
Metric Metal Works
D. McDonald & Co.
John J. Griffin & Co.
Lovekin Water Heater Co.
Detroit-Michigan Stove Co. (Garland Div.)
Bernitz Furnace Appliance Co.
Sprague Meter Co.
Carrier-Lyle Corp.
Peerless Heater Co.
Connelly Iron Sponge & Governor Co.
U. S. Cast Iron Pipe & Foundry Co.
Tinnerman Stove & Range Co.
Cleveland Gas Meter Co.
Isbell-Porter Co.
Automatic Gas-Steam Radiator Co.
Crown Stove Works
Bryan Steam Corp.
Connersville Blower Co.
Pittsburgh Equitable Meter Co.
Giant Manufacturing Co.
Youngstown Pressed Steel Co.
A-B Stove Company
Ensign-Reynolds, Inc.
Chaplin-Fulton Mfg. Company
Fisher Governor Co., Inc.
B-Line Boiler Company
Sherwin-Williams Co.
Bryant Heater & Mfg. Co.
Geo. D. Roper Corp.
General Office Equipment Corp.
Time-O-Stat Controls Company
Robertshaw Thermostat Co.
Merco Nordstrom Valve Co.
S. R. Dresser Mfg. Co.
Stacey Manufacturing Co.
Wilcolator Company
Koppers Co.
West Gas Construction Co.
Hays Mfg. Co.
American Heater Co.
American Stove Co.
Reliable Stove Co.
Dangler Stove Co.
Direct Action Stove Co.
Quick Meal Stove Co.
New Process Stove Co.
Geo. M. Clark & Co.
Gas Machinery Company
Independent Stove Co.
Consumers Construction Co.
Plibrico Company

Lawson Mfg. Company
 Mears-Kane-Ofeldt, Inc.
 Robins Conveying Belt Co.
 Mulcare Engineering Co.
 Bartlett Hayward Co.
 Eriez Stove & Mfg. Co.
 Ray-Glo Corp.
 Armstrong Cork & Insulation Co.
 Cruse Kemper Co.
 West Gas Improvement Co.
 Dearborn Chemical Company
 P. M. Lattner Mfg. Co.
 Partlow Corp.
 U. G. I. Contracting Co., Div. United Engineers
 & Constructors, Inc.
 Permutit Company
 Home Incinerator Co.
 Ohio Foundry & Mfg. Company
 Fuller & Warren Co. (Troy, N. Y.)
 Boone County Coal Corp.
 Pennsylvania Furnace & Iron Co.
 Servel Sales, Inc.
 Mueller Company
 Payne Furnace & Supply Co., Inc.
 National Lead Co.
 Thatcher Company
 General Gas Light Co.
 Robbins Publishing Co.
 Surface Combustion Co.
 Groble Gas Regulator Co.
 W. E. Lamneck Co.
 Wetherbee-Gunn Co.
 Bristol Company
 Economy Governor Co.
 Mohawk Asphalt Heater Co.
 Hotstream Heater Co.
 Columbia Burner Co.
 Peerless Mfg. Co.
 Barber-Greene Company
 Utilities Publication Co.
 Linde Air Products Corp.
 Semet-Solvay Engineering Corp.
 Quakertown Stove Works
 Pittsburg Water Heater Co.
 Welsbach Company
 Hoffman Heater Co.
 Beckwith Company
 Cutler-Hammer, Inc.
 Crane Company
 Sands Mfg. Company
 Wailles Dove Hermiston Corp.
 Kitson Company
 Lambert Meter Co.
 Glenwood Range Co.
 Improved Equipment-Russell Eng. Corp.
 General Ceramics Co.
 Emil Steinhurst & Sons, Inc.
 Klimatic Clothes Dryer Corp.
 Porcelain Enamel & Mfg. Co.
 Caloric Gas Stove Works
 Parsons Company
 Floyd-Wells Company
 P. H. & F. M. Roots Co.
 Hurley Machine Co.
 James B. Clow & Sons
 National Cast Iron Pipe Co.
 A. J. Lindemann & Hoverson Co.
 Columbus Heating & Ventilating Co.
 Bailey Meter Co.
 Burgess-Parr Co.

American Gas Furnace Co.
 A. P. Smith Mfg. Co.
 Walker & Pratt Mfg. Co.
 Foxboro Co., Inc.
 C. O. Bartlett & Snow Co.
 Universal Sand Equipment Company
 International Business Machines Corp.
 Burroughs Adding Machine Co.
 Hush-a-Phone Corp.
 Perco-Steril Machine Corp.
 J. B. Slattery & Bro., Inc.
 Combustion Engineering Corp.
 International Coal Carbonization Co.
 Dry Quenching Equipment Corp.
 International Combustion Tar & Chemical
 Equipment Corp.
 Sexton Stove Manufacturing Corp.
 Savory, Inc.
 Peninsular Stove Company
 Cleveland Trencher Company
 American Cast Iron Pipe Co.
 Harper-Wyman Manufacturing Co.
 Troop Water Heater Company
 Johnson Gas Appliance Co.
 Favorite Stove & Range Company

New Gas Customer Magazine Is Offered

A NEW publication entitled, "Comfort at Home," is now being issued as a magazine for gas customers by the Bowser Service Corp., 225 Fifth Ave., New York, N. Y.

This is a 12-page monthly magazine which is bought in quantity lots by the gas utilities and sent to a select list of customers. The magazine is attractive, and contains interesting and informative articles.

The Bowser Service Corp. states that this magazine was first used by Miss Mary E. Dillon, President of The Brooklyn Borough Gas Co. Further information can be secured direct from the Bowser Service Corp.

COMFORT AT HOME



May - Nissam Transp-ads

Industrial Gas Section

J. P. LEINROTH, Chairman

C. W. BERGHORN, Secretary

C. C. KRAUSSE, Vice-Chairman

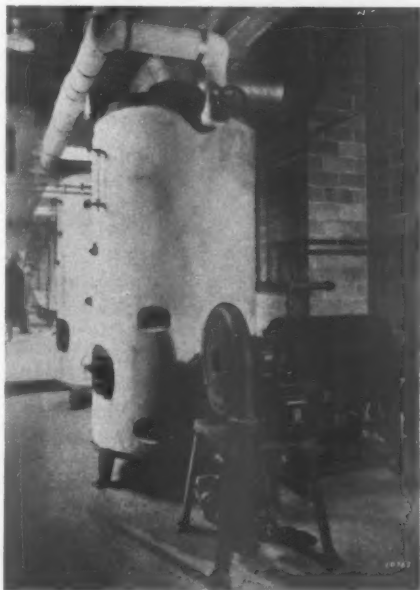
A Cleaner Adopts the Clean Fuel

By J. B. NEALEY

STEAM for use in cleaning and dyeing establishments can now be had automatically and continuously, and, what is more, without dirt. Gas-fired boilers have so demonstrated their superiority in eliminating air pollution, improving working conditions, and lowering costs over those heated with other fuels, that they bid fair to revolutionize steam practice in this industry.

Many otherwise thoroughly modern plants are still out-of-date as to the fuel used in raising steam. Why this factor, so vital in this particular kind of work where the product is so susceptible of dirt contamination, has been thus far neglected, is hard to say. Nevertheless, most cleaning and dyeing plants are still addicted to the use of coal or oil which laden the air with ashes, smoke, or soot which oftentimes necessitates the cleaning of garments all over again.

There is at least one plant that has eliminated this chance by adopting a clean fuel, gas, and with less labor and expense. This is one of the largest cleaning and dyeing establishments in Chicago and the installation consists of two 45-horsepower steam boilers fired with gas. The space occupied



Gas steam and hot water boilers which are automatic as to temperature control and water feed

by these two boilers is only 11 x 16 ft., while that taken up by a single 50-horsepower boiler fired with coal or oil is considerably larger to say nothing of the room required for coal and oil storage.

As these boilers are automatic, both as to temperature control and water feed, they need absolutely no attention. However, a licensed engineer is required by law in Chicago, and one is retained, but he is always kept busy on maintenance and the \$50 a week that is paid to him would, of a necessity, be paid out to

some one else were he not there. Furthermore, the single item of coal and ash handling, which is now done away with, formerly amounted to \$180 a month.

In addition to supplying steam for all processes in the plant requiring steam, these boilers also furnish hot water at all times and heat the plant in winter. Steam is available 17 minutes after lighting up, which is a great contrast from banked fires or oil which have to be heated anyway before burning properly.

Steam dryers used in this plant are of the perforated revolving cylinder type enclosed in a steel shell. These are 12 ft. long and 6 ft. in diameter. Air is blown through a

compartment containing steam coils and the heated air is forced into the dryer. There is another method of drying used in this plant which consists of a large room in which the garments are hung on racks. Dry hot air is circulated through the room and the garments by means of a unit consisting of a series of steam pipes similar to a radiator. These heat the air which is blown onto the clothes by a motor driven fan.

The use of steam boilers, utilizing gas as a fuel and fired automatically, is a comparatively new procedure in the cleaning plant, but an establishment so equipped is able to give the public quicker service and better work at lower prices.

Gas Measurement Course Well Attended



H. D. Frank

THE largest gas measurement short course in the history of such projects closed at Norman, Okla., April 18, after a three-days session. Attendance exceeded 450. Fourteen states were represented in the registration, these being in numerical order of representation: Oklahoma, Texas, Louisiana, Kansas, Pennsylvania, Missouri, Arkansas, Ohio, Colorado, Massachusetts, Illinois, Mississippi, Connecticut, and New Mexico. Members of the engineering faculty of the University of Oklahoma and engineers, graduates of other technical colleges of established standing, conducted class work; while manufacturers' representatives, including several shop foremen, supervised bench work, more than \$25,000 worth of mechanical equipment having been installed in the engineering building of the university by manufacturing companies for use in this course. This course covered domestic gas measurement and measurement of natural gas in production, transportation, and distribution involving maximum quantities and all pressures. Prof. W. H. Carson of the Oklahoma university engineering faculty, directed the school. F. D. Frank of the Cities Service Gas Co., Bartlesville, was chairman of the general committee.

An outstanding feature of the course was the paper and discussion on "Early Developments of Orifice Meter Measurement," by Thomas R. Weymouth, of Tulsa, President of the Ok-

lahoma Natural Gas Corp., and of the Oklahoma Utilities Association.

School authorities, manufacturers' representatives, and utility executives who saw the course in operation were enthusiastic in their approval of the project and their praise of the intensive work done by the men privileged to attend.

The course is sponsored annually by the University, the Corporation Commission, and the Oklahoma Utilities Association. E. C. Joullian of Oklahoma City, chairman of the Gas Division of the Oklahoma Utilities Association, announced on Thursday the appointment of D. A. Sillers of the Lone Star Gas Company and the Community Natural Gas Company of Dallas, Texas, as chairman of the general committee for the seventh annual course, which will be held at Norman in the spring of 1930, on dates to be announced later.

Plan Exhibit at Heating and Ventilating Show

THE American Gas Association has reserved for the convenience of its manufacturer members a section of space in the International Heating and Ventilating Exposition, which will be held in Philadelphia the week of January 27, 1930. The importance of this is emphasized by the fact that several associations, such as the Oil Burner Association and others, have grouped the exhibits of their members in this exposition. This exposition represents a splendid opportunity to convey graphically to the heating and ventilating engineers of the United States the progress that has been made in the development of gas heating equipment.

This space reserved by the American Gas Association was engaged six months ago in order to assure members of a desirable location. Booking of space should be done as quickly as possible because the number of booths available in this section is limited. All communications with reference to space should be directed to W. H. Huston, Grand Central Palace, New York City, who advises that spaces will be allotted in the order of applications received.

The following firms have already reserved space:

Bryant Heater and Manufacturing Company; General Gas Light Company; Mears-Kane-Ofeldt, Inc.; American Gas Products Corp.; Carrier-Lyle Corp.; Richmond Radiator Company; National Radiator Company.

Laclede Plans to Erect New Holder

THE Laclede Gas Light Co., of St. Louis, Mo., will start soon the erection of a new gas holder of 10,000,000 cu.ft. capacity to serve a rapidly expanding district. The new holder and pumping station represent an investment of a quarter of a million dollars.

Commercial Section

G. M. KARSHNER, Chairman

J. W. WEST, Jr., Secretary

G. E. WHITWELL, Vice-Chairman

The Gas Merchant's Viewpoint

(Continued from page 326)

of merchandise. We explained why and how, briefly by making a bigger market by our promotion efforts, and keying it to high standards, we would help everybody. Without this key to high standard merchandise, the merchants must expect an unsound and highly competitive market resulting in an impaired public confidence, and eventual black eye for the business. One merchant dissented—said he had spent years building up a good business. Our attitude was that we intended injury to no one, and would let the gentleman have it his own way, although we were sorry he couldn't see it our way.

Well, a year afterward, when we put up to this same dealer the question of the gas company selling water heaters, he quickly replied, "You do it. It helps a good dealer when the gas company gets into the field, because it raises public standards, of which he has the benefit. I was wrong a year ago." I mentioned this to indicate what can be accomplished with guiding the dealer's viewpoint.

On the other hand, we have had to stand up before meetings of master plumbers and say to them that the city was full of poor water heaters, poorly installed, that they, the plumbers, were responsible, that this condition was injurious to our business and would have to be corrected. Then follows the blunt question: "Will you fellows do it, or do you want us to?"

The plumbing contractors' side of this story is very interesting and very pertinent. This is best explained by quoting a prominent Ohio plumbing contractor who a short time ago, while addressing a gathering of master plumbers from over the State stated:

"The trouble with us master plumbers and heating contractors is that we are not merchants, but master workmen engaged in a technical business in which, I believe, as a trade, we are remarkably proficient, but

that is all we are. We have forgotten, in the improvement and carrying on of good workmanship, that to get anywhere even as contractors we have got to be merchants and salesmen of the things we deal in as well. This thought gradually grew on me in the past few years with the result that our firm pays as much attention to our display room and to our sales promotion as to the actual execution of the orders we receive."

He then proceeded to enjoin upon the plumbing and heating contractors that they get busy at once and master the modern science of merchandizing.

I do not know how it is in all parts of the country, but it can be stated as a fact that plumbing contractors in our section make their money from the sale of appliances rather than from the profit on labor, and if this is true of the plumbing trades, think how completely true it must be of stores, such as hardware and house furnishing stores, whose only possible profit is in the sale of their merchandise, which, for us, consists of their stocks of gas appliances. Our obligation, as a gas industry, in the case of the plumbing contractors, would appear to be to help them become better merchants by supplying them with merchandizing service and assistance and direction, which, in all cases, we have found they are very anxious to secure.

The case of the appliance dealer who is already a merchant, and perhaps a good one, is different. In his case, it is a matter of stimulating his interest, helping him realize the profit that is to be derived from the sale of gas appliances, and educating him to the advantages of selling good gas appliances. After we have stimulated his interest, we must ourselves create a better and bigger demand for gas appliances.

The first step on our part is an understanding of our problem and then, in respect to the people and allied industries upon which we are dependent, forming and

maintaining contacts with them which are a benefit to ourselves, to them, and to the public which we serve. There are times, also, when a gas company can best help the merchants and dealers by ethical competition in the sale of gas appliances, but, again, mutual helpfulness can here, also, be maintained by directing this merchandizing to the enlargement and betterment of the market itself. Thus the advantage is mutual—good for the gas company, gas appliance dealer and gas consumer. A frank and fair understanding at the outset eliminates many difficulties, for the dealer's viewpoint is essentially the same as ours—how best to serve the community in which both do business.

So begins a long and mutually helpful series of relations between the merchant, gas company and its neighbor. They, as well as we, have complaints and both yield to treatment remarkably well when you can talk them over.

The whole point is to create a better market for gas. I know that the expressions "better market for gas" and "gas conscious" and many more have become by-words but please do not under-estimate the importance of what they represent because they have become monotonous. The plain fact is that the whole world has changed in the past few years, and the natural gas industry is changing with it, and to be blind to these new facts is fatal.

Broad Viewpoint Needed

There must be market knowledge, market study, and methods employed to use that knowledge to best advantage—we must be gas merchants, but we must also be modern merchants. Rule of thumb methods have departed from even so highly generalized and elusive a business as that of the merchants.

The viewpoint is very much more than one of selling gas appliances, getting them sold, or merely getting them on our lines. The big thing is to get them on our lines in the sound commercial ways that good merchants always have known, and which good

merchants have adapted to the changing state of their communities.

People now-a-days want service, they want a good article, they want a good backing behind it and they want reasons. There are a dozen places to put their money where once there was but one. All of these places are good ones, too, and we must compete with them for the single, simple and sufficient reason that they are competing with us.

To show the frantic anxiety to make markets keep up with modern production, much of which is over production, many familiar instances may be cited, such as the continual changing of furniture and automobile designs, color and style designs in kitchens and bath rooms—all intended to unsettle styles, and making people dissatisfied with what they have even though it may serve them equally well.

Home Modernization

Perhaps the newest development in this modern movement to enlarge old markets and create new ones in places which even the most optimistic salesmen might regard as hopelessly saturated, is one of which so far not much has been said, although a hint of it has been conveyed in Home Modernization. The fact is that architects, building supply manufacturers and builders are beginning to realize that there is an untouched mine of new business in replacing the exteriors of buildings, even of the loftiest skyscrapers. Thus, what was originally a natural engineering development of modern steel building construction will be turned to a profitable account in the marketing of manufactured products. It has begun to dawn on some of the more progressive architects that the walls which have been frankly regarded as veneer suspended or attached to the skeleton of modern steel buildings can be removed and replaced as easily as they were put on.

This is the state of fierce competition for the buyers' dollars with which gas must compete—colorless, invisible gas. All we have as an industry is this one product to sell. The key is in selling new and better uses of it, and in adopting merchants' methods in doing it.

Technical Section

HARRY E. BATES, Chairman

H. W. HARTMAN, Secretary

B. V. PFEIFFER, Vice-Chairman

A Large Capacity Dust Pot with Muslin Screen

By W. M. HENDERSON

PRIOR to February, 1927, the Los Angeles Gas and Electric Corp. distributed a mixed gas composed of natural gas and oil gas, or reformed gas. This gas, passing through storage holders, was distributed through a system of high- and low-pressure trunk lines to district regulators.

Internal corrosion in the pipe was caused by the wet gas, and the moisture acted as a binder holding most of the rust to the walls of the pipe. Small dust pots were adequate to catch any dust that was knocked off by the high velocity of the gas passing through the pipe.

With the introduction of straight natural gas to the distribution system, the dust trouble became very acute. Most of the dry gas, being supplied directly to the trunk lines, took out the moisture which had acted as a binder for the rust, and the resulting dust was carried on to fill the dust pots, cut district regulator valve seats, choke services, and clog orifices on consumers' appliances. In fact, the distribution department was flooded with poor pressure and no gas complaints.

Mr. Henderson is superintendent of gas distribution for the Los Angeles Gas & Electric Corp., Los Angeles, Calif.

Presented at A. G. A. Distribution Conference, Boston, Mass., April 3-5.

A new dust pot was designed with a large filtering area and storage capacity. The dust pot shown in the illustration was installed ahead of the regulator in district regulator pits and in some cases two or four pots in parallel were installed in trunk lines.

Gas enters the 20" wrought iron pipe dust pot through a 6" pipe that is welded in and replaces a part of the side wall of the pot. This 6" pipe is pierced along its length to allow gas to enter along the length of the pot. The gas then passes around and through a muslin covered, wire mesh, reinforced screen; then passes inside the screen to a 6" outlet pipe that is welded to the center of the bumped head forming one end of the dust pot. The other end of the dust pot is formed by a standard bolted blind flange.

The screen is supported by a bronze rod which extends from the center of the outlet pipe at one end of the dust pot to the flange at the opposite end. The screen may be removed through the hand hole in the blind flange and the muslin sack removed and replaced by a clean sack. The area of muslin effective for filtering is approximately 1800 sq.in.

Two thousand and one hundred pounds of dust were removed from the old style dust



The dust trap complete



How muslin screen is installed

pots during April, 1927—soon after natural gas was turned into the mains and when peak loads were still heavy. During November and December of the following winter 16,250 pounds of dust were removed but as we had installed the new type dust pot, we experienced little trouble.

Developing Coke Market

(Continued from page 328)

of condition as to operation and appearance, and particularly appearance. Every truck is washed once a week and oftener in bad weather. We use bright red with aluminum letters. All trucks are painted once a year at least.

Until the present year we have consistently been out of coke during the winter months, having to place the dealers and ourselves on an allotment basis, sometimes limiting deliveries to a half-ton to a customer. During the past year we have increased our production of coke by approximately 10,000 tons. This added production came over night and necessitated prompt work on our part to dispose of this extra coke as we were apparently already nearing the saturation point. We were able to increase our sales this year about 8000 tons over the year previous.

Due to our still limited storage and this added production, we felt we must ship a small amount of coke out of town, but we have found this a very unsatisfactory thing to do. This is true not only from the standpoint of price but also point of distribution. We sold this coke through a jobber and found it almost impossible to keep them from shipping coke into towns that had coke problems of their own. In the future if we find it necessary to ship any coke outside of Battle Creek, the setup will be such that this could not happen.

As before stated, until this year we were consistently out of coke, but we did not lessen our advertising. We continued to run at least two advertisements a week in the newspapers the year around. Then at the beginning of the summer campaign a cir-

cular letter was sent to the entire community, and a large amount of newspaper advertising employed. We also used several 50' sign boards in various parts of the town and a large number of smaller boards. These boards are painted and kept in fine appearance. Movie advertising and various other smaller media are also used.

The cooperation we have received from our local dealers has been a wonderful asset. About 35 per cent of our total sales are made through them and a goodly percentage of the dealers do not handle any coke other than our make. We give them a \$3 differential on their sales.

Our total sales run approximately one ton per capita which, I think you will agree, is far above the average. If we have achieved any unusual success in the merchandising of coke in Battle Creek, we feel the following factors have been largely responsible for this success:

Good quality of the product.

Careful preparation of the coke.

Courtesy on the part of our drivers and all other employees.

Intensive follow up on all sales, especially new customers.

Our policy of not increasing prices at any time just because the traffic will bear it.

Taking care of old customers first in times of fuel stringencies.

Gaining the confidence and cooperation of our dealers.

Preparing Charts

(Continued from page 348)

cent on the per cent scale. It is evident that variations expressed by these curves are shown in much too fine a detail, and are not in line with established principles in the subject of "significance of figures." The right hand chart, on the other hand, is based on a wide open grid, which is much easier to read, and clearly shows the situation without unduly stressing the individual points.

As a general rule it may be said that data presented for reproduction in printed articles should rarely, if ever, use the fine prepared grid. Examples of where the fine grid may be properly used may be found in

the A. G. A. Industrial Series, especially "Combustion," where detailed and accurate data are presented through the use of curves intended to be used for actually scaling off information. This is not the intent of most curves, which are used to illustrate trends and general situations, and should therefore be made on as broad a scale as possible.

Thickness of Lines

Another point to consider is the preparation of the lines of the curves themselves. This must be done with a view to the accuracy required. For the left hand illustration shown here, the curve lines on the original drawing are much too fine. They are legible in this particular instance because the chart shows lines crossing the prepared grid at a clear angle. If the chart lines happen to coincide with either the vertical or horizontal lines of the grid, they would never be visible in the finished copies. To overcome this it is advisable to make the lines of drawings and curves at least twice as broad as the broadest lines in the grid. This will enable them to be visible even when they coincide with the grid itself.

White Space

In the preparation of copy other than charts and curves it is important to place the title close to the drawing. White space adds to the effectiveness of the drawings, but it also adds greatly to the cost of printing. With the suggestion made that the material be built up in layers with the printing on separate sheets, it is possible to place this printing where desired after the rest of the drawing is completed.

Attention is called to the article on "Trends in the U. S. Gas Industry" appearing on page 131 in the March 1929 issue of the MONTHLY, showing some excellent applications of this principle. These charts are plotted on logarithmic or ratio paper, which should always be used for illustrating trends because the chart shows percentage changes, and permits direct comparisons between the slope of one curve and that of another, regardless of its location on the diagram.

Illinois Course

(Continued from page 351)

"House Heating Estimating"—Glen C. Carnahan, Manager, Furnace Division, James B. Clow and Company.

"Warm Air Heating Systems"—Prof. A. P. Kratz, University of Illinois.

Thursday, June 27

"Hot Water and Steam Heating Systems"—Professor Stark, Bryant Heater and Manufacturing Co.

"Servicing Gas-Fired Heating Equipment"—H. B. Johns, Manager, Heating Division, The Peoples Gas Light and Coke Company.

Banquet

Friday, June 28

"Insulation"—Dr. T. E. Layng.

"Engineering Aspects of Selling House Heating"—Lyle C. Harvey, Sales Promotion Manager, Bryant Heater and Manufacturing Company.

Saturday, June 29

Final Examination.

Natural Gas Meeting

(Continued from page 366)

A committee was appointed to consider future meetings of the Department. R. W. Gallagher, of Cleveland, Ohio, is chairman, and T. B. Gregory, N. C. McGowen, H. L. Montgomery, and M. W. Walsh, are members.

A. W. Leonard, of Tulsa, Okla., was appointed chairman of the nominating committee, with H. J. Hoover and R. W. Gallagher as members.

Women's Meeting

For the first time in the history of natural gas conventions a meeting for the women of the industry was held. This was on May 6. Miss Lois Upshaw, of Dallas, Texas, presided.

Keith Clevenger, newly-appointed director of publicity and advertising for the A. G. A., was the first speaker, and he covered the subject of New Business in a capable manner. Mr. Clevenger spoke of the splendid opportunity the women of the industry have, and said that the influence of women

employees will help in the establishment of human relations with the customers.

Mrs. Anna J. Peterson, of Chicago, gave a splendid talk on home service activities, and this was followed by a paper on trade paper influence by George H. Finley, managing editor of *Western Gas*. Mr. Finley's paper was read by Craig Espey, Dallas representative of the magazine.

Mr. Finley drew attention to the importance of the trade press, and said that "women's share in utility activity will grow with the years, and in telling the utility story the trade paper will not overlook this important chapter."

A splendid address by Miss Mary Spear, of A. G. A. Headquarters, closed the women's meeting. Miss Spear gave interesting reminiscences of past natural gas conventions, and her paper was received with a great deal of interest, not only by the women present, but also by the men who had gathered to take part in the meeting.

P. U. A. A. Meets

(Continued from page 371)

meyer, Consolidated Gas Co. of New York, New York, N. Y.; Keith Clevenger, American Gas Association, New York, N. Y.; and Fred E. Eriksen, The Milwaukee Elec. Railway and Light Co., Milwaukee, Wis.

Henry Obermeyer was re-elected editor of the P. U. A. A. *Bulletin*. L. K. Starr, of the Georgia Power Co., Atlanta, Ga., was elected a delegate to the National Advertising Commission, succeeding Joe Carmichael, of Des Moines, Ia., whose term had expired.

Norcross and Eves Resign from New Haven

ANNOUNCEMENT has been made of the retirement of J. Arnold Norcross, vice-president and general manager of the New Haven Gas Light Co., New Haven, Conn., and Philmer Eves, advertising manager of the same company.

Mr. Norcross has been in the service of the company for 26 years, starting as engineer and superintendent, and subsequently becoming secretary and treasurer, and then vice-president and general manager.

Mr. Norcross is planning to take a long vacation, after which he may take up the work of consulting gas engineer.

Mr. Eves is resigning because of ill health. In accepting his resignation, Mr. Norcross stated: "The 14 years you have spent with us have been accompanied with a large growth in gas sales. You may justly take credit to yourself as a useful and valuable factor in bringing about this result through your conduct of its advertising and home service departments."

Both Mr. Norcross and Mr. Eves have been prominent members of the A. G. A., and their resignations will be keenly felt by their many friends. Mr. Eves was the first chairman of the A. G. A. Home Service Committee.

OUR NEW MEMBERS

- Mullin, L. P., Sr., Houston Gulf Gas Co., Houston, Texas.
- Hollis, T. J., Southern Oregon Gas Co., Ashland, Ore.
- Whipple, J. W., Southern Oregon Gas Co., Grants Pass, Ore.
- Vaughan, Earl, Southern Oregon Gas Co., Medford, Ore.
- Brown, M. R., Southern Oregon Gas Co., Roseburg, Ore.
- Weidner, Paul G., Midwest Refining Co., Casper, Wyo.
- Deaver, Chas. C., Consolidated Gas Electric Light & Power Co., Baltimore, Md.
- Macneal, Fulton D., Consolidated Gas Electric Light & Power Co., Baltimore, Md.
- Cottrell, Wm. K., Oklahoma Natural Gas Corporation, Tulsa, Okla.
- Reifenstuhl, Geo. H., Public Service Co., of Northern Illinois, Chicago, Ill.
- Kohlmeyer, Flora, Columbus Gas Light Co., Columbus, Ind.
- Anglen, Evan C., Middle-West Utilities Co., Chicago, Ill.
- Williams, John H. G., The Henry Souther Engineering Co., Hartford, Conn.
- Wigen, Martin Louis, The Koppers Company, Pittsburgh, Pa.
- Chretien, Chas. A., Westchester Lighting Co., Mt. Vernon, N. Y.
- Collins, E. L., Utica Gas & Electric Co., Utica, N. Y.
- Hastings, Russell A., Public Service Co. of Northern Ill., Chicago, Ill.
- Ferry J. W., Republic Metalware Co., Buffalo, N. Y.
- Treadway, A. A., A. A. Treadway, Inc., Philadelphia, Pa.
- Jones, G. M., The United Gas Imp. Co., Detroit, Mich.
- Cleary, Chas. N., Consolidated Gas Co. of New York, New York, N. Y.
- Masterson, Edward C., Phoenix Oil & Transport Co., Ploesti, Roumania.

Associations Affiliated with A. G. A.

Canadian Gas Association

Pres.—Frank Elcock, Ottawa Gas Co., Ottawa, Ont.
Sec.-Tr.—G. W. Allen, 7 Astley Avenue, Toronto.
Conv., June 13 & 14, 1929, Ottawa, Ont.

Colorado Utilities Association

Pres.—H. S. Robertson, Denver Tramway Corp., Denver, Colo.
Sec.-Tr.—O. A. Weller, Public Service Co. of Colo., Denver, Colo.
Conv., 1929.

Empire State Gas and Electric Association

Pres.—Chas. S. Ruffner, Mohawk Hudson Power Corp., Albany, N. Y.
Chairman Gas Section—H. E. Merrill, Republic Light, Heat & Power Co., Tonawanda, N. Y.
Sec.—C. H. B. Chapin, Grand Central Terminal, New York, N. Y.
Conv., Sept. 19 & 20, 1929, Saranac Inn, N. Y.

Illinois Gas Association

Pres.—E. E. Lungren, Western United Gas & Electric Co., Aurora, Ill.
Sec.-Tr.—George Schwaner, 305 Illinois Mine Workers Bldg., Springfield, Ill.
Conv., 1930.

Indiana Gas Association

Pres.—C. L. Kirk, Citizens Gas Co., Indianapolis, Ind.
Sec.-Tr.—F. W. Budd, Central Indiana Gas Co., Muncie, Ind.
Conv., 1930.

Michigan Gas Association

Pres.—F. A. Newton, Consumers Power Co., Jackson, Mich.
Sec.-Tr.—A. G. Schroeder, Grand Rapids Gas Light Co., Grand Rapids, Mich.
Conv., July 1 to 3, 1929, Mackinac Island, Mich.

Mid-West Gas Association

Pres.—E. H. Vieregg, Central Power Co., Grand Island, Nebr.
Sec.-Tr.—Roy B. Searing, Sioux City Gas & Electric Co., Sioux City, Iowa.
Conv., Waterloo, Iowa, Apr. 14-16, 1930.

Missouri Association of Public Utilities

Pres.—T. J. Strickler, Kansas City Gas Co., Kansas City, Mo.
Sec.-Tr.—F. D. Beardslee, 315 N. 12th St., St. Louis, Mo.
Conv., 1930.

New England Gas Association

Pres.—J. J. Quinn, Boston Consolidated Gas Co., Quincy, Mass.
Exec. Sec.—C. D. Williams, 41 Mount Vernon St., Boston, Mass.
Chairman Operating Div.—Isaac T. Haddock, Cambridge Gas Light Co., Cambridge, Mass.
Secretary Operating Div.—H. G. Taylor, Lawrence Gas & Electric Co., Lawrence, Mass.
Chairman Sales Div.—J. H. Sumner, Cambridge Gas Light Co., Cambridge, Mass.
Chairman Industrial Div.—L. B. Crossman, Boston Consolidated Gas Co., Boston, Mass.
Sec.-Tr. Industrial Div.—Chas. H. O'Donnell, Boston Consolidated Gas Co., Boston, Mass.
Chairman Acctg. Div.—R. D. Washburn, Massachusetts Lighting Co., Boston, Mass.
Sec.-Treas. Acctg. Div.—Otto Price, Boston Consolidated Gas Co., Boston, Mass.
Chairman Manufacturers Div.—T. H. Piser, Welsbach Co., Boston, Mass.

Sec.-Treas. Manufacturers Div.—J. H. McPherson, 250 Stuart St., Boston, Mass.
Conv., 1930.

New Jersey Gas Association

Pres.—R. A. Koelher, Public Service Electric & Gas Co., Newark, N. J.
Sec.-Tr.—H. E. Cliff, Public Service Electric & Gas Co., Newark, N. J.
Conv., 1930.

Ohio Gas and Oil Men's Association

Pres.—L. K. Langdon, Union Gas & Electric Co., Cincinnati, Ohio.
Sec.-Tr.—Wm. H. Thompson, 811 First National Bank Bldg., Columbus, O.
Conv., 1930.

Oklahoma Utilities Association

Pres.—T. R. Weymouth, Oklahoma Natural Gas Corp., Tulsa, Okla.
Mgr.—E. F. McKay, 1020 Petroleum Bldg., Oklahoma City, Okla.
Conv., 1930.

Pacific Coast Gas Association

Pres.—C. H. Dickey, Hotel Fairmont, San Francisco, Calif.
Exec. Sec.—Clifford Johnstone, 447 Sutter St., San Francisco, Calif.
Conv., Sept. 10-13, 1929, at Del Monte, Calif.

Pennsylvania Gas Association

Pres.—W. A. Norris, Lebanon Valley Gas Co., Lebanon, Pa.
Sec.-Tr.—Geo. L. Cullen, Harrisburg Gas Co., Harrisburg, Pa.
Conv., 1930.

Pennsylvania Natural Gas Men's Association

Pres.—George W. Ratcliffe, Columbia Gas & Electric Corp., Pittsburgh, Pa.
Sec.-Tr.—H. A. Gager, 2017 Farmers Bank Bldg., Pittsburgh, Pa.
Conv., 1929.

Southern Gas Association

Pres.—D. H. Levan, Savannah Gas Co., Savannah, Ga.
Sec.-Tr.—J. P. Connolly, 141 Meeting St., Charleston, S. C.
Conv., 1930.

Southwestern Public Service Association

Pres.—W. H. Burke, Stone & Webster, Inc., Houston, Texas.
Chairman Gas Section—R. A. McNees, San Antonio Public Service Co., San Antonio, Texas.
Sec.—E. N. Willis, 403 Slaughter Bldg., Dallas, Texas.
No Convention, 1929.

The Public Utilities Association of Virginia

Pres.—A. W. Higgins, Virginia Public Service Co., Charlottesville, Va.
Sec.—A. B. Tunis, 301 East Grace St., Richmond, Va.
Conv., 1929.

Wisconsin Utilities Association

Pres.—G. W. Van Derzee, The Milwaukee Electric Railway & Light Co., Milwaukee, Wis.
Exec. Sec.—J. N. Cadby, 432 Broadway, Milwaukee, Wis.
Meetings of Sections.

*Deceased.

Eleventh Annual Convention of the American Gas Association
Atlantic City, N. J. October 14-18, 1929

Employment Bureau

(Address All Communications to Key Number)

SERVICES REQUIRED

GAS SALES ENGINEER—Experienced in househeating. State complete details as to experience, age and salary desired. Address A. G. A.
Key No. 0136.

WANTED: Gas fired boiler, house heating sales engineer in New England territory. Position offers unequalled opportunity to the right man. Replies held in strictest confidence.
Key No. 0139.

LARGE EASTERN UTILITY wants Sales Engineer (Mechanical or Chemical preferred), 27 to 32 years of age, to sell manufactured gas for heating processes. Knowledge of combustion, furnace design and construction, and modern industrial heating practices desirable. Address A. G. A.
Key No. 0141.

GAS SALES ENGINEER—Utility Company operating in Connecticut requires services of gas sales engineer with experience in application of gas to industrial processes. State age, experience and salary desired. Address A. G. A.,
Key No. 0142.

METER SHOP FOREMAN. Company with 150,000 meters, located in Pennsylvania, has an opening in its meter shop for a capable foreman experienced in the repair and maintenance of tin and iron meters. Must be able to handle men and have ability to maintain an efficient organization. In reply, please state fully your age, experience, married or single, salary expected, and how soon available. Address A. G. A.
Key No. 0143.

THREE (3) CAPABLE NATURAL GAS HOUSE HEATING SALESMEN—men with a successful record in selling residence furnace conversion units. Fine opportunity for experienced men, possessing real sales ability. Location Southern city of 200,000 population where natural gas has recently been introduced. Salary and commission. In first letter give complete sales record, age and references. Address A. G. A.
Key No. 0144.

HOUSE HEATING SALESMAN—Large Eastern utility has vacancy for a man between 30 and 45 years of age for sales work in the use of gas for house heating. Must be a Technical High School graduate and have at least two years' experience in residence heating. Permanent position. Please state age, experience, education and salary desired. Address A. G. A.
Key No. 0145.

SERVICES OFFERED

AVAILABLE, a man who has been employed through a continuous period of years in nearly all branches of the gas business. General office to superintendent of manufacture and distribution, including both coal and water gas. Would like to make a similar connection or one of general supervision. Address A. G. A.
Key No. 293.

OPPORTUNITY to secure services of experienced gas range salesman as representative of manufacturer in Eastern Territory. Knowledge of gas appliances covered by 15 years' experience, both local and traveling. Utility and general trade. Address A. G. A.
Key No. 276.

GAS ENGINEER. College trained, thirty years old, married and employed at present. Nine years' experience in operation many types and sizes of coal, water, blue and producer gas plants. Address A. G. A.
Key No. 277.

EXPERIENCED CONSTRUCTION ENGINEER and designer with a good technical background and structural steel experience desires to locate in New York or vicinity. Address A. G. A.
Key No. 278.

EXECUTIVE, graduate Mechanical Engineer with 20 years' experience in design, construction, operation and management of Gas Properties. Competent to handle all local affairs, increase business and reduce operating costs. Would like appointment as Manager of small property, or Division Manager or Gas Engineer of close connected group. Age 41. Married. Good references. Address A. G. A.
Key No. 279.

AVAILABLE—A man who is employed at present as an Engineer at one of the properties of a large holding company. During his ten years in the

business he has been cadet engineer, plant foreman and superintendent's assistant in large plants and manager of a small property. Thorough knowledge of water gas operation, high- and low-pressure distribution, and office routine. Technical graduate, 39 years of age. Address A. G. A.
Key No. 280.

ENGINEER with 7 years' experience in gas and electric utility construction, maintenance, operation and accounting, desires new connection as manager, assistant manager, or superintendent of small utility. New England preferred. Address A. G. A.
Key No. 281.

SALESMAN with wide experience, including sales promotion, desires connection as representative for manufacturer. Acquainted with gas companies and dealers in territory from Boston to Washington. Proposition on agency basis for Eastern territory or Pacific Coast also considered. Address A. G. A.
Key No. 282.

GAS DISTRIBUTION ENGINEER. Also fully acquainted with manufacture and utilization. Understands the necessary methods of handling the public and municipal officials. Ready to serve at once. Will go anywhere, if position is permanent. References will be given by district or city or other local and managing companies. Address A. G. A.
Key No. 284.

GAS ENGINEER, college education, with twelve years' experience, first four with Coal Gas & Electric Co., last eight years as manager of small Water Gas Co., desires position as manager or assistant manager of a gas or combination company. Address A. G. A.
Key No. 285.

ADVERTISING MAN of wide experience, now employed by large public utility, available for position as director of publicity either in same field of work or with manufacturer. Capable of organizing and directing an advertising department, or handling the job unassisted. Age, 35; married; Protestant. Willing to locate anywhere. Ready to entertain further negotiations. Address A. G. A.
Key No. 287.

MANAGER OR GAS DISTRIBUTION SUPT. Man with over 20 years' experience in one company desires position as manager of small property or distribution superintendent. Am experienced in water gas, high and low pressure, and can furnish the best of references from former employers, municipal authorities, etc. Age 43. Address A. G. A.
Key No. 288.

GAS ENGINEER, 45, experienced. Coal and Water Gas Sets, as manager for fair sized plant. Good executive. Address A. G. A.
Key No. 290.

YOUNG LADY with twelve years' experience in coke oven and gas business, desires secretarial position. New York City preferred. Address A. G. A.
Key No. 291.

ADVERTISING MAN, experienced in trade paper, newspaper, direct mail and other forms of advertising, available June 1. Now employed as advertising manager by large public utility. Capable of organizing and directing an advertising department or handling the work unassisted. Age 30, married. Protestant. No objection to location. Address A. G. A.
Key No. 292.

POSITION WANTED—Technical man now employed desires new location. Eight years' experience in distribution and transmission of natural and manufactured gas. Am able to organize and direct large crews. Also experienced in leakage surveys and appraisal work. Address A. G. A.
Key No. 294.

TECHNICAL GRADUATE, twenty years' experience in manufacture of water gas. Age 45, married. Open for position as manager or superintendent. Address A. G. A.
Key No. 295.

WANTED—Position as assistant to engineer of distribution by young man with four and one-half years' experience in Distribution Department of large corporation. 22 years old. Single. Willing to travel. Good references. Address A. G. A.
Key No. 296.

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